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VOL. I. NO. 4.

CLASSIFICATION OF THE SUPERFAMILY CHALCIDOIDEA.

BY WM. HARRIS ASHMEAD, A. M.

INTRODUCTION.

About fourteen years ago Mr. Herbert H. Smith placed in my hands for study part of his extensive collection of South American parasitic Hymenoptera, representing the old families *Proctotrypidæ*, *Cynipidæ* and *Chalcididæ*. The collection was a valuable one and when I took it I confidently expected to find time to finish with it within two or three years; but so much other material was thrust upon me for study that I found it a physical impossibility to do it justice in that length of time; only a few short papers on it have been published. The work accomplished during these past fourteeen years has I think fully demonstrated that I have not been idle, my knowledge of the groups, genera, and species of the Hymenoptera has greatly increased and broadened, and I now feel better able to do justice to the splendid collection received so many years ago.

The Herbert H. Smith collection of insects, made in South America, representing nearly all orders, has been acquired by the Carnegie Museum, Pittsburgh, Pa., and much to my regret, the many fine species, except a set of duplicates in my hands, and which I had always hoped might be secured by the National Museum, must go to that Museum. Dr. W. J. Holland, the Director of the Carnegie Museum, desires now that I complete my work as soon as possible and return the material in my possession. In acceding to this request I have stipulated that he publish my classification of the chalcid-flies, or the Superfamily Chalcidoidea, as a part of this work, and it is through his liberality that I am able to give so many fine illustrations and present in a more attractive form my ideas on the classification of another great complex in the Order Hymenoptera.

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THIS VOLUME

IS RESPECTFULLY DEDICATED TO

DR. CARL W. von DALLA TORRE

THE EMINENT BOTANIST AND HYMENOPTERIST, PROFESSOR IN THE
UNIVERSITY OF INNSBRUCK, WHO, IN THE COMPILATION OF
"CATALOGUS HYMENOPTERORUM," HAS DONE SO
MUCH FOR WORKING HYMENOPTERISTS

THE AUTHOR

Washington, D. C., January, 1904

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ERRATA ET CORRIGENDA.

Page 240, line 27, *Otetesella* should read *Otitesella*.
Page 254, line 30, *Anacryptua* should read *Anacryptus*.
Page 261, line 43, *Prodecotoma* should read *Prodecatoma*.
Page 293, line 40, (type *Phænodescus*) should read *Phænodiscus*.
Page 297, line 7, *Tetracnemoidea Ashmead* should read *Tetracnemoidea Howard*.
Page 318, line 7, *Nasonia* Ashwood should read *Nasonia* Ashmead.
Page 335, line 33, Australia should read Australian.
Page 339, line 20, Roudani should read Rondani.
Page 342, line 2, *Asecodas* should read *Asecodes*.
Page 347, line 3, Tetrastechinæ should read Tetrastichinæ.
Page 355, line 7, *Stenomesioidea* should read *Stenomesioideus*.
Page 362, line 9, Abdomen petiolate should read abdomen sessile or subsessile.
Page 364, line 38, *Diplalepis* should read *Diplolepis*.
Page 365, line 1, (= *Megastigmus* Dalman) should read (= *Megaspilus* Westwood).
Page 371, line 13, (= *Kriechbaumenella* Dalla Torre) should read (= *Kriechbaumerella*).
Page 373, line 31, *Enargopelte* should read *Euargopelte*.
Page 377, line 32, (type *H. dichrous* Thomson) should read (type *H. niger* Ashmead).
Page 380, line 5, *Lymnænon* should read *Lymnæon*.
Page 389, line 15, (type *Malea* Ashm.) should read *mellea*.
Page 400, line 19, *Plesiostigmodus* should read *Plesiostigmodes*.
Page 496, line 7, *Parencyrtus brasiliensis* sp. nov. should read *Parencyrtus brasiliensis* Ashmead.
Page 502, line 14, Subfamily V. should read Subfamily IV.
Page 505, line 6, *verticellatus* should read *verticillatus*.
Page 537, line 14, *Dimmoctia* should read *Dimmockia*.

NOTE BY THE AUTHOR.

Some pages of my MS. were lost, either in transmitting or in the printing office, and some species in the Index do not appear in the body of this work. These are:

Decatoma æquiramulis Mayr, *D. breviramulis* Mayr, *D. longiramulis* Mayr, *Spilochalcis mesomela* Walk., *Ceratosmicra flava* Ashmead, and *C. Koeblei* Ashm.

To the Bibliography of the Genera should be added:

APTEROLELAPS Ashmead, Fauna Hawaiiensis, I., 1901, p. 312 (type *A. nigriceps* Ashm.).
Aseiba Cameron (= Cerchysius Westw. *teste* Howard), Biol. Centr.-Amer. Hym., I., 1889, p. 127.
BRUCHOBIUS Ashmead, gen. nov., ante, p. 314 (type B. laticeps Ashm.).
NEOCATOLACCUS Ashmead, gen. nov., ante, p. 320 (type Catolaccus tylodermæ Ashm.).
NEOLELAPS Ashmead, Fauna Hawaiiensis, I., 1901, p. 312 (type N. hawaiiensis Ashm.).
Packardiella Ashmead, n. n. for Pteratomus Packard, ante, p. 364 (type Pteratomus putnamii Pack.).
Tetracnemoidea Howard, Proc. U. S. Natl. Mus., XXI., 1898, p. 233 (type T. australiensis Howard).
Westwoodella Ashmead, gen. nov., ante, p. 359 (type *Oligosita subfasciata* Westw.).
Xanthoatomus Ashmead, gen. nov., ante p. 360 (type *X. albipes* Ashm.).

The *Proctotrypoidea* and *Cynipoidea* in the collection will be described in another paper.

In this contribution I have restricted myself to elucidating the chalcid-flies and have divided it into two parts. The first part is devoted to a classification of the superfamily Chalcidoidea; the second part deals with the South American Chalcidoidea. In this latter part, besides my report upon the Herbert H. Smith collection, the descriptions of the new genera and species, is given a complete bibliographical catalogue of all the known South American species.

PART I. CLASSIFICATION OF THE CHALCID-FLIES, OR THE SUPERFAMILY CHALCIDOIDEA.

Among the ten great groups or superfamilies of the Hymenoptera, recognized by the author, there is none so large numerically, more important economically, or so difficult to study and classify as the superfamily Chalcidoidea or the Chalcid-flies. The species exist everywhere not by hundreds, but by thousands and millions, and they are probably of far greater importance, from an economic standpoint, than are the Ichneumonoidea or ichneumon-flies.

Only a few of them, comparatively speaking, are in any sense injurious, a single minor group, the tribe *Isosomini*, in the family Eurytomidæ, alone being injurious to vegetation. All the others, except the fig-insects forming the family *Agaonidæ*, the *Megastigminæ*, a subfamily in the Torymidæ, and some few hyperparasitic genera in different families, being genuine parasites and beneficial to man. It is true, however, that some of the chalcid-flies destroy a few beneficial insects, but the vast majority of the known species destroy mostly the injurious species in the other orders, *i. e.*, the Coleoptera, the Lepidoptera, the Diptera, the Rhynchota, etc.; they attack the eggs, the larvæ, and the pupæ, and in some cases even the imagoes of their hosts, and their value to many great industries of the world cannot easily be estimated. Who, for example, can estimate the value of the fig-insects to the fig industry of the United States? Through the efforts of Dr. L. O. Howard and Mr. W. T. Swingle, of the U. S. Department of Agriculture, the caprifier of the Smyrna fig, *Blastophaga psenes* Linné (*grossorum* Gravenhorst), has been successfully introduced into the fig-orchards of California, and the experiments already made fully demonstrate the great value this little chalcid-fly has to the fig industry. It is evidently destined to revolutionize fig-growing in the United States, making it exceedingly profitable, and, on account of the superiority of the American-grown

Smyrna fig pollenized by these Chalcid-flies, will in time diminish the importation of the Smyrna fig. The *Megastigminæ* too, I suspect, are like the fig-insects, and will be found to be of great importance as pollenizers of various plants and trees.

At present the known genera and species of the Chalcidoidea are considerably less in number than are the Ichneumonoidea recently classified by the writer; but this is due simply to the fact that the literature on the subject, in various languages, is widely scattered, in many foreign journals, magazines, proceedings of learned societies, etc., and the minute size of most of the species and the difficulty of their study, have deterred entomologists from giving them any attention. Only a little over 5,000 species have been described.

If we look back for a century and a half we find comparatively few who have given much attention to these "atoms of creation," and of these a few names only stand out conspicuously as students of this great complex. The study of the group began about one hundred and fifty years ago with Linnæus in Sweden and with Geoffroy in France. Linné, or Linnæus, in his Systema Natura, tenth edition, published in 1758, described several species under his genera *Ichneumon, Cynips, Sphex*, etc. Others took up their study, and an interest in them was aroused in Sweden, Austria, Germany, France, Italy, and England. In Sweden, besides Linné, Swederus, Fabricius, Zetterstedt, Dalman, Boheman, Dahlbom and Thomson did much valuable work in the group; in Germany, Klug, Nees von Esenbeck, Bouché, Ratzeburg, and Förster—the last mentioned, the greatest systematic worker in the group; in Austria, Reinhard and Mayr; in Russia, Motschulsky; in France, Geoffroy, Latreille, Fonscolombe, Perty, Guérin, Giraud, Sichel, and André; in Italy, Spinola and Rondani; in England, Curtis, Haliday, Westwood, Walker, Saunders, Kirby, and Cameron; and in America, Say, Fitch, Cresson, Walsh, Riley, Provancher, Howard, and Ashmead. A few others might be mentioned, but those specified are the ones whose names stand out prominently as adding materially to our knowledge of the group during the eighteenth and nineteenth centuries.

For years I have been studying this great complex and in the following pages have attempted to define the families, subfamilies, tribes, and genera of the world. The work has been a gigantic and most laborious one, necessitating the microscopic examination of many thousands of these minute creatures; but if it shall be found that I have brought some order into their classification, that I shall excite an interest in the collecting of the many thousands still unknown, and that I shall stimulate others to study them, my time has not been wasted and I shall be amply repaid.

SUPERFAMILY VII. *CHALCIDOIDEA.*

1758. Cynips, Linné (partim), Syst. nat., Ed. 10^a, I., p. 343.

1802–05. Diplolepaires, Familie soixante deuxième (partim) Latreille, Hist. Nat. Crust. et Ins., XIII., p. 198.

1802–05. Cynipseres, Familie soixante-troisième (partim), opus. cit., p. 211.

1809. Diplolepariæ, Familia quinta (partim) Latreille, Gen. Crust. et Ins., III., p. 15.

1809. Cynipsera, Familia sexta (partim) Latreille, opus. cit., supra, p. 21.

1811. Diploleparia, Familia (partim) Spinola, Ann. du Mus. Natur., XVII., p. 138.

1820. Pteromalini, Familia (partim) Dalman, Kongl. Svensk. Vet.-Akad. Handl., p. 132.

1825. Chalcidites, Quatrième Tribu (partim) Latreille, Fam. Natur. d. Règne anim., p. 446.

1830. Chalcida, Family, Leach, Edinb. Encycl., IX., p. 144.

1840. Chalcididæ, Family, Westwood, Intro. Mod. Class. Ins., II., p. 154.

1846. Chalcidites, Order, Walker, List Chalc. Brit. Museum, I., p. 1.

1856. Chalcidiæ, Förster, Hym. Stud., II., pp. 1–90.

1875. Pteromalidæ, Familia, Thomson, Hym. Skand., IV., p. 3.

1877. Chalcidita, Tribe 4, Förster, Ueber den Syst. Werth d. Flügelg. bei d. Hym., p. 19.

1886. Chalcididæ, Family, Howard, Ent. Amer., I., p. 197.

1897. Chalcidoidea, Superfamily VII., Ashmead, Proc. Ent. Soc. Washington, IV., p. 243.

TABLE OF FAMILIES.

1. Hind wings exceedingly narrow, linear, pedunculate at base; ovipositor issuing from beneath just anterior to tip of abdomen; antennæ without a ring-joint, the scape rather small, short, compressed...... 12

Hind wings never very narrow, nor linear, not pedunculate at base; ovipositor issuing far anterior to the tip of abdomen; antennæ elbowed, with 1, 2, or 3 ring-joints, very rarely without, the scape large and rather long. 2

2. Axillæ triangularly produced or advanced forward into the basal region of the scapulæ, their base or anterior margin *on* or *in advance* of an imaginary line drawn from tegula to tegula; anterior tibial spur most frequently small or weak; tarsi 3–4-jointed, rarely 5-jointed or heteromerous............ 10

Axillæ normal, or at least never produced forward into the basal region of the scapulæ, their base or anterior margin straight and always back of an imaginary line drawn from tegula to tegula; anterior tibial spur large and strong; tarsi 5-jointed (rarely 4-jointed, or 3- or 4-jointed in some wingless males) 3

3. Head in ♀ oblong, with a deep, broad longitudinal furrow above, the occipital margin superiorly, usually with a small recurved tubercle or spine at its middle; mandibles or palpi most frequently furnished with saw-like appendages; anterior and posterior legs very stout, their tibiæ very much shorter than their femora, the middle legs very slender, sometimes aborted; hypopygium very

prominent, acute, cultriform or lanceolate; ovipositor long, prominently exserted; ♂ always apterous, the head anteriorly with a deep triangular fovea, in which are placed the short 3–9-jointed antennæ; the abdomen in the ♂ is broadly sessile, long and tubular, thickened at base, or broadened apically with a tubercle or filament at each apical angle. . . . . . .Family LX. AGAONIDÆ.

Head rarely oblong and quite differently formed, never with a deep broad longitudinal furrow above, most frequently transverse, or subquadrate, the occipital margin never with a small recurved spine; mandibles and palpi without saw-like appendages; middle legs not especially slender, the anterior and posterior legs are often stout, but their tibiæ are always longer, at least never shorter than their femora; hypopygium rarely very prominent; ♂ most frequently winged, rarely apterous; in the latter case the abdomen is normal, not long and tubular.

Mesopleura large, entire, without a femoral furrow, except occasionally in some males, the mesepisternum large, triangular, not extending to base of front coxæ; middle tibial spur saltatorial, most frequently long and stout, or dilated at base. 8

Mesopleura always with a femoral furrow or impression, the mesepisternum variable, rarely large, except in the *Cleonymidæ*, most frequently small, wedge-shaped, or linear and extending to base of front coxæ; if large and triangular, either the anterior or the posterior femora are much swollen; middle tibial spur not saltatorial, usually short or weak, never very stout.

Hind tibiæ with 2 apical spurs, rarely with 1 only; in the latter case the radius terminates in a large, rounded stigma, the ovipositor very long. 4

Hind tibiæ with 1 apical spur; ovipositor rarely long; if long the stigma is small. 9

4. Mandibles falcate, usually with 1 or 2 teeth within; thorax most frequently very gibbous, the scutellum usually very large, often abnormally developed, elevated and produced posteriorly, the axillæ connate, not distinctly separated from the surrounding surface and broadly united along their inner margins. 6

Mandibles usually 3–4-dentate at apex, rarely falcate, with 1 or 2 teeth within; thorax not, or very slightly, gibbous, the axillæ distinctly separate, their inner margins most frequently widely separated, very rarely touching.

Hind coxæ rarely much larger than the anterior coxæ, most frequently smaller or equal; if much larger, the pronotum is elongate, mesepisternum large, the hind legs very long, the postmarginal vein very long; ovipositor very rarely prominent. 5

Hind coxæ very large and long, usually five or six times larger than the anterior coxæ.

Hind coxæ subtriquetrous, or at least compressed into a sharp ridge above; hind femora rarely very much swollen, and most frequently simple, rarely with one large tooth or denticulate beneath; hind tibia usually straight; abdomen most frequently subcompressed (more rarely depressed), with a long ovipositor; if without an exserted ovipositor, the abdomen is conical or conic-ovate with a peculiar sculpture, the radius (stigmal vein) usually very short, the hind tibiæ at apex normal . . . . Family LXI. TORYMIDÆ. Callimomidae —

Hind coxæ usually very long and subcylindrical; hind femora always much swollen and most frequently armed with teeth beneath or finely serrated, rarely without teeth; hind tibiæ strongly curved and obliquely truncately produced at apex, so that the tarsi seem to be attached a little before tips; abdomen of various shapes, most frequently conical or conic-ovate, more rarely globose, or oblong-oval, the ovipositor very rarely prominent; radius variable, rarely very short . . . . Family LXII. CHALCIDIDÆ. ——

5. Pronotum rarely transverse quadrate, conical or conically produced anteriorly, or very short, transverse linear, and very much narrowed medially, rarely as wide as the mesonotum. 7

Pronotum large, quadrate or transverse quadrate, never very short, if somewhat shortened always as wide as the mesonotum.

Pronotum quadrate or subquadrate; abdomen in ♀ not triangulated, either globose, ovate, conic-ovate or lanceolate and compressed or subcompressed, the hypopygium most frequently prominent plowshare-shaped; second dorsal segment never very large; mandibles not strong, most frequently 4-dentate.............................Family LXIII. Eurytomidæ.

Pronotum shorter, more transverse and as wide as the mesonotum; abdomen in ♀ most frequently triangulated, or globose, the second and third segments occupying most of the dorsal surface, the following very short and more or less retracted within the third; hypopygium not prominent; mandibles 2- or 3-dentate at apex...............Family LXIV. Perilampidæ.

6. Second abdominal segment very large and most frequently enclosing the following; coxæ not large, subglobose, nearly equal; all legs very slender; radius scarcely developed, its stigma sessile or subsessile...Family LXV. Eucharidæ.

7. Mesepisternum not large, triangular; anterior femora never much swollen, the posterior femora also normal or only slightly swollen; marginal vein in hind wings usually long, the costal cell not reaching to the hooklets or spinulæ and most frequently very narrow; radius well developed.

Family LXVI. Miscogasteridæ.

Mesepisternum large, triangular; either the anterior or the posterior femora are much swollen and sometimes toothed, or both are swollen with the hind femora toothed; if with slender legs, the hind legs are very long, their coxæ long, cylindrical, while the radius (stigmal vein) in front wings is very short, with the postmarginal vein very long extending to the apex of the wing (*Pelecinella*).

Family LXVII. Cleonymidæ.

8. Mesonotum either depressed, with more or less distinct parapsidal furrows, the scapulæ longitudinally ridged, or convex or subconvex, entirely without furrows, rarely convex with distinct furrows; axillæ most frequently meeting at inner basal angles, rarely very widely separated.

Family LXVIII. Encyrtidæ.

9. Mesonotum subconvex with incomplete or complete parapsidal furrows; hind coxæ rarely much larger than the front coxæ; axillæ separated, not meeting at inner basal angles; mesepisternum usually small, wedge-shaped or triangular; hind wings with a long marginal vein; mandibles usually stout, 3- or 4-dentate at apex.......................................Family LXIX. Pteromalidæ.

10. Hind coxæ normal; mesopleura impressed 11

Hind coxæ abnormally large and dilated, their femora flat or compressed; tarsi very long; mesopleura entire, not impressed; marginal vein in front wings most frequently extraordinarily lengthened, the radius very short, scarcely dilated; mesonotum without furrows ...... Family LXX. Elasmidæ.

11. Tarsi 4–5-jointed, rarely heteromerous; anterior wings not short and broad, with the pubescence normal, marginal and radial veins normal; postmarginal vein often wanting; mesonotum with complete or incomplete furrows.................................Family LXXI. Eulophidæ.

Tarsi 3-jointed; anterior wings short and broad, broadly rounded at apex with the pubescences most frequently arranged in rows, more rarely normally pubescent; marginal and radial veins united in the form of a strongly curved line ∩......................Family LXXII. Trichogrammidæ.

12. Pronotum usually large, rounded, or conically produced anteriorly; wings always with a long marginal fringe, nearly veinless and always without a radius (stigmal vein), the marginal vein most frequently reduced to a mere dot; antennæ in ♀ most frequently terminating in a distinct fusiform or egg-shaped solid club, more rarely with a 2-jointed club; tarsi 4–5-jointed.

Family LXXIII. Mymaridæ.

FAMILY LX. AGAONIDÆ.

1846. Agaonidæ, Family 6 (partim) Walker, List Chalc. Brit. Museum, I., p. 23.
1856. Agaonoidæ, Familie (S. descrip.) Förster, Hym. Stud., II., p. 29.
1871. Agaonidæ, Family (partim) Walker, Notes on Chalc., Pt. IV., p. 58.
1867. Blastophagidæ, Familia, Kirchner, Cat. Hym. Eur., p. 188.
1882. Cynipidæ, Sycophagides, Division 1, Saunders, Trans. Ent. Soc. London, p. 20.
1897. Agaonidæ, Family LX., Ashmead, Proc. Ent. Soc. Washington, IV., p. 243.

This family is one of the most striking and remarkable of any in the superfamily Chalcidoidea. It is based upon the genus *Agaon* Dalman, established in 1818, from a specimen taken in Sierra Leone, Africa.

The species composing this family, on account of their habits, curious forms, and the diversity of structure in the sexes, were long a puzzle to the ablest and most astute of the European hymenopterologists, but it is now definitely settled that they form a component of this great complex. Sir Sidney Saunders, as late as 1883, placed them as a division with the family *Cynipidæ.* In my opinion, however, they have little in common with the Cynipoidea, and I concur with Walker, Westwood, and Mayr, in believing them a component of this major group.

Mr. Francis Walker, an Englishman, was the first to give the group family rank; but, as is the case with most of his families, he never properly defined or characterized it, and merely lumped together a miscellaneous lot of insects obtained from figs, and called them a family — the Agaonidæ. His ideas of the family were extremely vague and indefinite, and he placed in it many forms with which they had no relationship.

In 1871, Walker, in speaking of them said: "The Agaonidæ appear as yet chiefly in three aspects, and in three different regions. The first region is the Mauritius, where they have been discovered by the researches of Dr. Coquerel. The three species figured are said to be 'condemned to eternal darkness' in the central regions of figs. These figs are the fruit of *Ficus terragena* and are unfit for human food. Dr. Coquerel found the three species (*Apocrypta paradoxa*, *A. perplexa* and *Sycocrypta caeca*) in abundance in the interior of these figs, together with great numbers of a fourth species, which he named *Chalcis? explorator* and which he believed to be parasitic on the other three species. Dr. Coquerel thought he saw an affinity between them and certain Bethylids, *Scleroderma contractor*, etc."

Walker thought they had more connection with certain South American and Australian *Thynnidæ.* He says: "*Scleroderma* seems to have more affinity with *Typhlopone*, the worker of *Labidus*, and with *Dichthadia glaberrima*, the supposed female of *Dorylus*; and thereby the multitudinous tribe of ants whose economy is so remarkable, emerges from blind and radical *Apocryptæ* and *Sycocryptæ*, the perpetual dwellers in the interior of figs." "But the affinity of these two genera to the *Chalcidiæ* is more evident and appears by several connecting links in the *Agaonidæ;* and thus the near relation to the general ancestors of the thousands and perhaps tens of thousands of the Chalcidiæ species, the tribe being considered in unity, are cradled in figs."

Our knowledge of fig-insects, within the past twenty-five years, has been very greatly augmented by the studies of Prof. John O. Westwood and Sir Sidney Saunders, of England, Dr. Gustav Mayr, of Vienna, Austria, Dr. Paul Mayer, of the Naples Station, Italy, and my own studies on some Florida, Mexican and West Indies species, so that to-day sufficient forms are known in both sexes to enable me to segregate, define and place in their proper groups, the miscellaneous insects known as fig-insects.

In this work I have restricted the *Agaonidæ* to the caprifiers, or true fig-insects, chalcid-flies that live in and pollenize, or fructify, fig-trees.

The others, heretofore classified with them, belong elsewhere, in three or four different families, and are either inquilinous or genuine parasites. Some, the vast majority, belong to the *Torymidæ*, while others belong to the *Chalcididæ, Miscogasteridæ*, *Pteromalidæ*, etc.

All fig-trees, in a wild state, are diœcious and wherever fig-trees grow, principally in tropical and semi-tropical countries, there also will be found fig-insects, for these microscopic creatures are essential to their pollenization.

Undoubtedly, judging from the great number of fig-trees known to botanists, many genera and hundreds of species still remain unknown to us.

Among the genuine fig-insects, two well-marked subfamilies may be distinguished, separable by the aid of the following table:

TABLE OF SUBFAMILIES.

Abdomen in ♀ subcompressed, the ovipositor prominent, the mandibles *with* an appendage, usually serrate; males apterous, the abdomen long, narrowed towards apex and curving beneath the thorax. Subfamily I. AGAONINÆ.

Abdomen in ♀ subcompressed, the ovipositor prominent, the mandibles *without* an appendage, the palpi sometimes *with* an appendage; otherwise similar to the Agaoninæ; males apterous, the abdomen broadened towards apex, narrowed towards the base, and with a tubercle or long filament at each apical angle...Subfamily II. SYCOPHAGINÆ.

SUBFAMILY I. AGAONINÆ.

1883. Cynipidæ, Division I., Sycophagides (partim), Saunders, Trans. Ent. Soc. London, 1883, p. 20.

The males in this subfamily are easily distinguished from those in the next by the shape of the abdomen, which is always long and tubular, narrowed toward apex and never broadened at apex as in the *Sycophaginæ*. It is also more flexible and is usually curved or bent forward under the thorax.

The females are more difficult to separate and, although with practice one can detect a difference in cephalic characters, almost impossible to define, the only reliable character to separate them from those in the other subfamily is the mandibular appendage, which is usually finely serrate. In the *Sycophaginæ* the mandibles are always *without* an appendage.

The known genera falling in this group may be easily recognized by the use of the following table:

TABLE OF GENERA.

1. Females, always winged.......... 2
   Males, always apterous.......... 10
2. Antennæ with the third or fourth joint *with* a distinct process.......... 3
   Antennæ *without* a joint with a distinct proces.......... 9
3. Front wings *with* the marginal, stigmal and postmarginal veins fully developed, or at the most with the postmarginal vein absent.......... 4
   Front wings *without* marginal, stigmal and postmarginal veins.
   Head oblong, about 1½ times as long as wide; antennæ 11-jointed, thickened toward apex.
   Eupristina Saunders (type *E. masonii* Saund.).
4 Postmarginal vein present.......... 5
   Postmarginal vein absent.......... 7
5. Antennæ 11 or 12-jointed.......... 6
   Antennæ 10-jointed, the last five joints enlarged...... **Kradibia** Saunders (type *K. cowanii* Saunders).
6. Head not very long, quadrate or nearly so.......... 8
   Head oblong, or very long, from 2½ to 3 times as long as wide, the facial channel narrow; mandibles at apex bidentate; antennæ 11-jointed........ **Pleistodontes** Saunders (type *P. imperialis* Saunders).
7. Head quadrate or nearly, only a little narrower in front than behind; stigmal vein usually a little longer than the marginal.......... **Eisenia** Ashmead gen. nov. (type *E. mexicana* Ashm.).
8. Seventh abdominal segment on each side with a small *rounded* or at most oval spiracular fovea.
   Blastophagus Gravenhorst (type *Cynips psenes* Linné).
   Seventh abdominal segment on each side with an *elongate*, disk-shaped, spiracular fovea.
   Ceratosolens Mayr (type *C. appendiculatus* Mayr).
9. Front wings with the marginal, stigmal and postmarginal veins wanting; head trapezoidal, a little longer than wide; antennæ 11-jointed, not thickened towards apex, the joints smooth; middle legs very minute or subobsolete.......... **Tetrapus** Mayr (type *T. americanus* Mayr).
   Front wings with the marginal, stigmal and postmarginal veins present; head oblong, 2½ times as long as wide; antennæ (?) 12-jointed, the scape large, triangularly dilated, the funicle slender, filiform, the club abruptly enlarged, 3-jointed; mandibles 3-dentate; thorax bidentate at each side.
   Agaon Dalman (type *A. paradoxum* Dalm.).
10. Head anteriorly *with* a large, deep, triangular fovea.
    Basal part of antennæ enclosed in a canal.......... 11
    Basal part of antennæ *not* enclosed in a canal.......... 12

2. Head tridentate, with deep antennal furrows; a sharp, high carina or spine between the antennæ; marginal vein long 3

Head normal, not tridentate 4

3. Head *with* a long spear-like process; mandibles very large, three fourths the length of the head; antennæ 10-jointed .... **Paralæsthia** Cameron (type *P. mandibularis* Cam.).

Head *without* a long, spear-like process; mandibles not large; antennæ 9-jointed, sometimes apparently only 8-jointed, two of the terminal joints being closely united, without a visible suture between.
Cerocephala Westwood (type *C. cornigera* Westw.).

4. Facial impression wanting; antennæ 10-jointed, inserted close to the mouth border..**Spalangia** Latreille (type *S. nigra* Latr.).

Facial impressiom distinct; antennæ 9-jointed, inserted just above the clypeus.
Paraspalangia Ashmead, g. nov. (type *P. annulipes* Ashm.).

5. Head not tridentate, normal 6

Head tridentate, with deep antennal furrows and a long spine or sharp carina between 7

6. Mandibles very large, three fourths the length of the head; antennæ 10-jointed. .**Paralæsthia** Cameron.

Mandibles normal, not large; antennæ 11 or 12-jointed .... **Cerocephala** Westwood.

7. Facial impression wanting; antennæ 12-jointed .... **Spalangia** Latreille.

Facial impression distinct; antennæ (?) 10-jointed (broken) .... **Paraspalangia** Ashmead.

SUBFAMILY V. DIPARINÆ.

1875. Diparides, Subtribus, Thomson, Hym. Skand., IV., 1875, p. 217.

1886. Diparides, Tribe, Howard, Ent. Amer., II., pp. 33 and 35.

1897. Diparinæ, Subfamily V., Ashmead, Proc. Ent. Soc. Washington, IV., p. 236.

The peculiarities in the venation of the front wings alone will distinguish this subfamily, although there are other characters not easily defined. The marginal vein is very long, as long, or nearly, as the subcostal vein, the costal cell being exceedingly narrow, the postmarginal vein is also long.

The head in front is convex or subconvex, not depressed, the antennæ being usually long and inserted on the middle of the face, the scape long and slender, the funicle 6-jointed, the club stouter and 3-jointed. The metathorax is longer than usual, with distinct lateral carinæ, while the abdomen is ovate, somewhat depressed, and distinctly petiolate.

The species are rare and only two genera have been characterized.

TABLE OF GENERA.

1. Females 2

Males 4

2. Petiole linear, longer than the hind coxæ 3

Petiole shorter than the hind coxæ.

Abdomen oval; antennæ 13-jointed, subclavate, inserted near the middle of the face, the joints of the funicle stout, subequal, very gradually shortening .... **Panstenon** Walker (type *Miscogaster oxylus* Walk.).

3. Abdomen ovate; metathorax large, with delicate, irregular raised lines; second abdominal segment large, occupying fully one third or more of the whole surface of abdomen, the following segments short, subequal . . . . **Dipara** Walker (type *D. petiolata* Walk.).

4. Petiole linear, longer than the hind coxæ 5

Petiole shorter, not longer than the hind coxæ.

Antennæ filiform, not verticellate, pilose . . . . **Panstenon** Walker.

5. Antennæ with the joints of the flagellum well separated, subpedunctate and somewhat verticellate-pilose; body of abdomen oval or rounded, the second segment occupying fully one half the whole surface . . . . **Dipara** Walker.

FAMILY LXX. ELASMIDÆ.

1840. Eulophides, Subfamily 5 (partim), Westwood, Intro. Mod. Class. Ins., II.; Synop., p. 73.
1846. Eulophidæ, Family II. (partim), Walker, List Chalc. Brit. Museum, I., p. 61.
1856. Elasmoidæ, Familie 17, Förster, Hym. Stud., II., pp. 19, 25 and 71.
1878. Elasmina, Tribus, Thomson, Hym. Skand., V., p. 180.
1886. Elasminæ, Subfamily, Howard, Ent. Amer., I., p. 198.
1897. Elasmidæ, Family LXX., Ashmead, Proc. Ent. Soc. Washington, IV., p. 236.

This family is not closely allied to any other, although, on account of the 4-jointed tarsi, and the flabellate antennæ in the males, it deceptively resembles the family *Eulophidæ*. Structurally, however, the two families are totally distinct, the thorax, the front wings, the legs and the abdomen being quite different in these families.

In mesothoracic and abdominal characters the *Elasmidæ* show some affinity with the *Encyrtidæ*, but the relationship, if it ever existed, must have been very remote, in ages past, and it is not now traceable in the forms thus far discovered.

The group is easily recognized by the compressed, triangular shape of the body and abdomen, by the longer and narrower wings, by the venation, the marginal vein being usually, although not always, very long, with the stigmal vein very short, and by the abnormally developed legs, the hind coxæ being very large, strongly compressed, disk-like, the hind femora being rather stout, the tibiæ and tarsi being very slender, the latter being very long.

The species of *Elasmus* attack usually lepidopterous larvæ, but some have also been bred from microgasterid cocoons and from other insects. The Australia genus *Euryischia* Howard, attacks dipterous larvæ.

TABLE OF GENERA.

1. Females 2

Males 3

Many of the genera, especially in my subfamily *Idarninæ*, were included by Walker, Westwood and Mayr, among the *Agaonidæ*, a position not tenable. The genus *Podagrion* Spinola, too, on account of the swollen and dentate hind femora was placed by Mayr, Howard and others with the *Chalcididæ*. The swollen and dentate hind femora, although of great taxonomic importance, in themselves should not alone be depended upon to place genera and species. Many genera and species are now known with such femora that unquestionably belong to other families. In the family Cleonymidæ there is a whole subfamily with such hind femora and it would be absurd and most unnatural to classify it with the *Chalcididæ* on that account alone.

In establishing families many characters must be carefully considered, weighed and analyzed, and we should not be led astray by superficial resemblances or by characters common to many groups.

Six fairly well defined subfamilies have been recognized.

TABLE OF SUBFAMILIES.

1. Mesothoracic furrows not well defined, the scapulæ therefore scarcely or indistinctly separated; abdomen in ♀ conically pointed, the ovipositor not exserted. 6

Mesothoracic furrows distinctly defined, the scapulæ therefore well separated; ovipositor always prominently exserted, most frequently very long. 2

2. Hind tibiæ with only *one* apical spur. 5

Hind tibiæ with *two* apical spurs.

Posterior margin of the mesepisternum incised beyond the middle; metepimeron curved, dilated above the apex; posterior femora simple, neither armed with a tooth nor serrate. 3

Posterior margin of the mesepisternum entire; posterior femora rarely simple, more or less swollen, serrate or armed with one or two teeth beneath, sometimes much swollen and armed with several teeth beneath. 4

3. Stigmal vein always long; abdomen usually more or less depressed; if subcompressed the hypopygium is large and prominent; *males* frequently apterous, the head usually oblong, with a triangular fovea anteriorly in which lie the antennæ; abdomen short, never tubularly lengthened.

Subfamily I. IDARNINÆ.

Stigmal vein very short, the knob of same being sessile or subsessile; abdomen usually subcompressed, the hypopygium not prominent; *males* most frequently winged; if apterous, the head not oblong and without a triangular fovea anteriorly. . . . . .Subfamily II. TORYMINÆ.

4. Hind femora not much swollen, as long as their tibiæ, beneath feebly serrate or armed with *one* or *two* teeth beyond the middle towards apex, their tibiæ straight; metanotum usually with a median carina, coarsely rugulose or punctate; stigmal vein not long, but still longer than in the *Toryminæ*, oblique and elavate. . . . . Subfamily III. MONODONTOMERINÆ.

Hind femora much swollen and armed with from *four* to *eight* teeth, their tibiæ arcuate; metanotum with a Λ-shaped carina; stigmal vein short, the knob subsessile, similar to the *Toryminæ*.

Subfamily IV. PODAGRIONINÆ.

5. Stigmal vein in front wings terminating in a large rounded or dilated knob or stigma, the basal nervure distinct, straight.................................... Subfamily V. MEGASTIGMINÆ.

6. Abdomen in ♀ conic-ovate or produced at apex, in ♂ oblong, usually with a peculiar sculpture in both sexes, the middle segments most frequently with transverse rows of pits or rounded punctures; stigmal vein very short.. Subfamily VI. ORMYRINÆ.

SUBFAMILY I. IDARNINÆ.

1846. Agaonidæ, Family 6 (partim), Walker, List Chalc. Brit. Museum, I., p. 23.
1897. Idarninæ, Subfamily I., Ashmead, Proc. Ent. Soc. Washington, IV., p. 235.

All of the species composing this subfamily are found associated with the genuine fig-insects; they are either inquilinous or genuine parasites, as is the case in the *Cynipidæ* and the *Eurytomidæ*, and in at least another group in the Torymidæ, *i. e.*, the *Megastigminæ*.

The group comes nearest to the subfamily *Toryminæ*, agreeing with it closely in cephalic and thoracic characters, and in having two apical spurs on the hind tibiæ; but here the resemblance ceases, and it is easily separated by the difference in venation, shape of abdomen, etc.

The males are most frequently apterous, the head being long or oblong, with a triangular fovea anteriorly in which lie the antennæ, a character also found in the Agaonidæ; but the abdomen is short and never tubularly lengthened nor broadened at the apex, as in that family.

The females agree somewhat with the *Agaonidæ* in venation, but differ decidedly in cephalic, mandibular, and abdominal characters, the abdomen being either depressed, *without* a prominent ventral valve, or subcompressed with a prominent ventral valve, with a long ovipositor. From the *Toryminæ* they are at once distinguished by the *long* stigmal vein and the different shape of the abdomen.

TABLE OF GENERA.

1. Females.. 1
   Males.. 16
2. Abdomen normal, the last two segments not tubular........................... 2
   Abdomen abnormal, the last two segments very narrow and produced into a kind of tube or tail, the ovipositor very long.. 3
3. Antennæ 10-jointed.. 4
   Antennæ 13-jointed, with *three* ring-joints; mesonotum with distinct parapsidal furrows.
      Seventh abdominal segment very long, longer than the preceding segments united; scape of antennæ scarcely thrice the length of the pedicel..................... **Philotrypesis** Förster. (type *Cynips caricæ* Hasselq.).
      Seventh abdominal segment hardly as long as the preceding segments united; scape of antennæ long, about four times as long as the pedicel **Sycoscaptella** Westw. (type *S. affinis* Westw.).
4. Prothorax long, conical; metathorax long; legs short and stout, the front femora incrassated. **Polanisa** Walker (type *Idarnes transiens* Walk.).

5. Scutellum *not* flat, usually convex or at least subconvex, and usually, but not always, *without* longitudinal grooved lines 6

Scutellum flat and broad, quadrate, with *two* longitudinal grooved lines.

Metallic; flagellum filiform, the joints of the funicle at least twice as long as thick; ocelli obtusely triangularly arranged .... **Idarnes** Walker (type *I. carme* Walker).

Non-metallic; flagellum subclavate, the joints of the flagellum not or scarcely longer than thick; ocelli arranged nearly in a straight line.................. **Koebelea** Ashmead, g. nov. (type *K. australiensis* Ashm.).

6. Ovipositor *shorter* than the body and sometimes not at all prominent.......................... 11

Ovipositor *longer* than the body; funicle of antennæ 5-jointed 7

7. Abdomen with the ventral segments normal, *not* widened downwards 8

Abdomen with the ventral segments widened downwards.

Hypopygium very prominent, plowshare shaped; antennæ 12-jointed, with 2 ring-joints. **Goniogaster** Mayr (type *G. variicornis* Mayr).

8. Mesothoracic furrows distinct, complete.. 9

Mesothoracic furrows *not* distinct, wanting posteriorly.

Antennæ 11-jointed, with *one* ring-joint inserted much nearer to the front margin of the head than to the middle; stigmal vein long, nearly three fourths the length of the marginal. **Sycoryctes** Mayr (type *S. patellaris* Mayr).

9. Antennæ 12-jointed or less 10

Antennæ 13-jointed, with *three* ring-joints inserted at an equal distance between the middle and the front margin of the head; stigmal vein less than one third the length of the marginal. **Trichaulus** Mayr (type *T. versicolor* Mayr).

10. Antennæ 12-jointed with *one* ring-joint; stigmal vein about half the length of the marginal. **Apocryptophagus** Ashmead, g. nov. (type *Chalcis ? explorator* Coquerel).

Antennæ 9-jointed (teste Motschulsky); abdomen elliptic, much depressed, the ovipositor twice the length of the body.............................**Platyneura** Motschulsky (type *P. testacea* Motsch.).

11. Postmarginal vein distinct, always present 12

Postmarginal vein wanting or never well developed 14

12. Ovipositor hidden 15

Ovipositor always prominent or exserted 13

13. Antennæ 12-jointed with *two* ring-joints, the funicle 5-jointed, inserted near the clypeus, the joints of the flagellum fluted; body metallic; ovipositor about as long as the thorax and abdomen united or a little longer, and thickened towards apex. **Colyostichus** Mayr (type ♀ *C. longicaudis* Mayr, ♂ *Heteradrium longipes* Mayr).

Antennæ 11-jointed with *one* ring-joint, the funicle 5-jointed, the club 3-jointed, the joints of the funicle hardly longer than thick; ovipositor scarcely as long as the abdomen, gradually thickened towards apex. **Heterandrium** Mayr (type ♂ *H. biannulatum* Mayr, ♀ *Colyostichus brevicaudis* Mayr).

14. Scutellum *with* two longitudinal grooved lines, the axillæ widely separated; ovipositor a little shorter than the abdomen...............................**Sycophila** Walker (type *S. decatomoides* Walk.).

Scutellum *without* grooved lines, the axillæ nearly uniting at base of scutellum; ovipositor only slightly projecting.........................**Froggattia** Ashmead, g. nov. (type *F. polita* Ashm.).

15. Mesothoracic furrows indistinct, never complete; antennæ 9-jointed. **Micranisa** Walker (type *Idarnes pteromaloides* Walk.).

16. Tarsi 5-jointed.......... 17
Tarsi 3- or 4-jointed.......... 31

17. Apterous or with rudimentary wings.......... 18
Winged.......... 34

18. Antennæ inserted on the anterior margin of the head or far below its middle; clypeus not extending to the middle of the inner margin of eyes.......... 19
Antennæ inserted on the middle of the face.......... 30

19. Head anteriorly *with* a large, deep, triangular fovea from which originate the antennæ.......... 20
Head anteriorly *without* such a fovea; wings entirely absent, *not* represented by filaments....... 25

20. Wings represented by *two* pairs of thread-like filaments.......... 21
Wings represented by *one* pair of thread-like filaments or by bristles.......... 22

21 Head oblong, not or scarcely wider than the thorax, the eyes minute; antennæ separated by a sharp carina; hind tarsi with the first joint dilated.......... **Philotrypesis** Förster.
Head large, oblong, slightly narrowed anteriorly, the hind margin sinuate, the hind angles rounded, setose; antennæ 8- or 9-jointed with 1 ring-joint, the scape large, clavate; mandibles large, porrect, curved, acute and entire at apex, but *within*, 3-dentate.
Tetranemopteryx Ashmead, g. nov. (type *Sycoscapter 4-setosa* Westw.).

22. Head oblong, the hind angles rounded, *not* acute.......... 23
Head oblong-quadrate, the hind angles acutely produced, not rounded.......... 24

23. Head large, oblong, broader than the thorax; antennæ 10-jointed, *with* 1 ring-joint inserted close together near the front margin of the head; mandibles porrect, stout and curved, the tips acute, entire, the inner margin with a tooth behind the middle.......... **Sycoscapter** Westwood (type *S. insignis* Westw.).
Head oblong-quadrate, sinuate posteriorly; antennæ 8- or 9-jointed, *without* a ring-joint, inserted close together near the mouth; mandibles porrect, falcate, the tips bidentate, the inner margin with a tooth near the base.......... **Sycoscapteridea** Ashmead, g. nov. (type *Sycoscapter monilifer*).

24. Head oblong, the sides anteriorly nearly straight, the front angles rounded, the hind angles acutely produced; antennæ 8-jointed (or 9-jointed with 1 ring-joint), inserted close together near the mouth; mandibles small, falcate, entire; wings represented by short filaments.
Sycoscapterella Ashmead, g. nov. (type *Sycoscapter angulieeps* Westw.).

25. Antennæ shorter, at the most 9-jointed, the joints closely united, inserted further from each other than to the sides of the head, most frequently with only 4 or 5 free joints.......... 26
Antennæ longer, 10- or 11-jointed, with only the last three joints closely united, inserted near or not far away from the mouth border.......... 27

26. Head between the clypeus and the sides concave; mandibles bidentate; labium and palpi wanting, in place is a membranous tube; antennæ composed of 4 free joints, of which the third is small, annular, transparent and membranous.......... **Idarnes** Walker.
Head between the clypeus and side flat; mandibles 3- or 4-dentate; labium and labial palpi present, the palpi 1-jointed; tibiæ short, closely and thickly spinous; antennæ with 4 or 5 free joints.
    Head depressed, wider than long, but not perfectly flat, more or less triangular, the angles rounded.......... **Trichaulus** Mayr.
    Head perfectly flat, longer than wide, trapezoidal; mandibles broad, 4-dentate within; antennæ 5-jointed, the scape flat, dilated towards apex.......... **Koebelea** Ashmead.

27. Head more or less depressed; tarsi 5-jointed, the basal joint of hind tarsi often much compressed and with very long bristles.

Hind tarsi much longer than their tibiæ, the basal joint long 28

Hind tarsi not longer than their tibiæ, the basal joint short.......................... 29

28. First joint of flagellum smaller than the second; mandibles bidentate; hind tibiæ *with* several very long bristles, the first joint two thirds the length of the tibia.................**Colyostichus** Mayr.

First joint of flagellum much longer than the second; mandibles unidentate at apex; hind tibiæ *without* long bristles...**Sycoryctes** Mayr.

29. First joint of the flagellum only a little longer than the second and not much longer than thick; mandibles very long, strong and toothed within; hind tibiæ with short stiff bristles; all joints of tarsi slender; pronotum very large, quadrate, larger than the meso- and metanotum united.
Goniogaster Mayr.

30. Head large, sinuate anteriorly and posteriorly, and also with the lateral margins posteriorly incised so as to form a tooth just before the hind angles; wings represented by a pair of thread-like filaments; antennæ 10-jointed, with 2 ring-joints, inserted widely apart or laterly close to the eyes, the scape very large, dilated, quadrate above, rounded basally, and beneath at base deeply incised; mandibles robust, triangular, curved, the tips bifid, within towards base produced and tridentate.
Sycobiella Westwood (type *S. saundersii* Westw.).

Head large, transverse ellipsoidal, sinuate anteriorly, rounded posteriorly, the hind angles rounded; wings entirely wanting; antennæ 9-jointed, with 1 ring-joint, inserted on the middle of the face. much nearer together than to the inner margin of the eyes, the scape very large, dilated, clavate; mandibles long, porrect, the tips bidentate, dilated towards base, the dilation being tridentate.
Walkerella Westwood (type *W. timeraria* Westw.).

31. Tarsi 4-jointed; wings represented by thread-like filaments 32

Tarsi 3-jointed; wings wanting.. 33

32. Head oblong-quadrate, emarginate or sinuate anteriorly and posteriorly; ocelli absent; antennæ 8- or 9-jointed, without a ring-joint, inserted far above the middle of the face, the scape large, dilated, clavate; mandibles large, porrect, nearly as long as the head, curved, the tips bifid, the inner margin armed with a tooth near the middle or sometimes truncate.
Otetesella Westwood (type *O. digitata* Westw.).

33. Antennæ 9- to 11-jointed (the club sometimes 3 joints), with one ring-joint, shorter than the head and inserted close together near the mouth, the scape large, depressed, subclavate; mandibles small, acute, slightly curved, *without* teeth within........ **Sycoscaptella** Westwood (type *S. affinis* Westw.).

34. Postmarginal vein distinct, well developed 35

Postmarginal vein wanting or but slightly developed.. 39

35 Second joint of the funicle *not* shorter than the first.. 36

Second joint of the funicle very short, annular, much shorter than the first.
Antennæ 12-jointed, with 2 ring-joints; pronotum long.................**Colyostichus** Mayr.

36. Antennæ 11–12-jointed, with 1 or 2 ring-joints, inserted much nearer to the mouth than to the middle of the head, the funicle 5-jointed 37

Antennæ 13-jointed, inserted below the middle of the head, the furrows in the joints of the flagellum not ending in little teeth.. 38

37. Postmarginal vein longer than the stigmal; mandibles not long, falcate, 2- or 3-dentate; antennæ 11–12-jointed, the club not much thicker than the funicle; pronotum subquadrate, a little wider at the middle than before or behind; scutellum large, subconvex, the parapsidal furrows very fine, but distinct..**Colyostichus** Mayr.

Postmarginal vein *not* longer than the stigmal; mandibles very long, falcate, bidentate at apex; antennæ 11-jointed; pronotum very long, rounded in front; scutellum the parapsidal furrows distinct.........................**Sycobia** Walker (type *S. bethyloides* Walk.).

38. Stigmal vein rather short, less than one third the length of the marginal; antennæ 13-jointed, with 2 ring-joints and a 6-jointed funicle...**Trichaulus** Mayr.

39. Antennæ 13-jointed, with 2 ring-joints; mesonotum with distinct parapsidal furrows.

Pronotum quadrate, a little narrower than the mesonotum; scutellum with *two* grooved lines; abdomen oval, subdepressed, much shorter than the thorax, briefly petiolate, and terminating in an exserted penal sheath.......................................**Sycophila** Westwood.

Pronotum large, rounded anteriorly; scutellum *without* grooved lines; abdomen compressed, shorter than the thorax..**Froggattia** Ashmead

SUBFAMILY II. TORYMINÆ.

1840. Pteromalides, Subfamily (partim) Westwood, Intro. Mod. Class. Ins., II., Synop., p. 67.

1846. Torymidæ, Family 4 (partim) Walker, List. Chalcid. Brit. Museum, I., p. 14.

1871. Torymides, Subtribus (partim) Thomson, Hym. Skand., IV., pp. 59, 64.

1899. Toryminæ, Subfamily II., Ashmead, Proc. Ent. Soc. Washington, IV., p. 247.

The vast majority of the species falling in this group are parasitic on gall-inhabiting insects, belonging to the orders Hymenoptera and Diptera, although others are recorded as having been bred from Coleoptera, Lepidoptera, etc., and from the nests of bees and wasps.

I think it quite likely these latter records are erroneous, and that the Coleoptera, Lepidoptera, etc., had dipterous parasites from which the torymines came.

TABLE OF GENERA.

1. Females 2

Males 8

2. Antennæ 13-jointed, with only *one* ring-joint... 3

Antennæ 13-jointed, with *two* ring-joints...............**Lochites** Förster (type *L. papaveris* Förster).

3. Scutellum *without* a cross-furrow before apex.. 4

Scutellum *with* a cross-furrow before apex.

Abdomen with second dorsal segment incised medially at apex.

Syntomaspis Förster (type *Torymus cyaneus* Boheman).

4. First joint of flagellum *not* abruptly narrower than the following; clypeus at apex truncate....... 5

First joint of flagellum abruptly narrower than the following; clypeus at apex subproduced.

Lioterphus Thomson (type *Torymus pallidicornis* Boheman).

5. Thorax not especially long, the pronotum not conically elongate................................ 6

Thorax long, the pronotum much developed, conically elongate.

Abdomen with a distinct petiole, the body much compressed, shorter than the thorax, the ovipositor very long....................**Ecdamua** Walker (type *E. macrotelus* Walker).

6. Mandibles 3-dentate; head not triangular; costal cell wide....................................... 7

Mandibles 2-dentate; head subtriangular, as viewed from in front; costal cell narrow.

Callimomus Thomson (type *C. scaposus* Thomson).

7. Prothorax not especially short; metathorax declivous, not largely punctate.
Torymus Dalman (type *Ichneumon bedeguaris* Linné).
Prothorax short, the metathorax abruptly declining, largely punctate; antennæ subclavate, the club lanceolate. .... **Torymoides** Walker (type *T. amabilis* Walker).
8. Antennæ 13-jointed, with only *one* ring-joint.. 9
Antennæ 13-jointed, with *two* ring-joints... **Lochites** Förster.
9. Scutellum *without* a cross-furrow before apex... 10
Scutellum *with* a cross-furrow before apex................................ **Syntomaspis** Förster.
10. Mandibles 3-dentate; costal cell wide.. 11
Mandibles 2-dentate; costal cell narrow.................................. **Callimomus** Thomson.
11. Clypeus anteriorly normal, not produced... 12
Clypeus anteriorly subproduced medially................................. **Lioterphus** Thomson.
12. Thorax normal, the pronotum not especially long.. 13
Thorax long, the pronotum elongate, conical................................. **Ecdamua** Walker.
13. Pronotum not especially short, the metathorax not largely punctate............... **Torymus** Dalman.
Pronotum short, the metathorax abruptly declivous, largely punctate............ **Torymoides** Walker.

SUBFAMILY III. MONODONTOMERINÆ.

1875. Torymides, Subtribus (partim) Thomson, Skand. Hym., IV., p. 59.
1899. Monodontomerinæ, Subfamily III., Ashm .Proc. Ent. Soc. Wash., IV., p. 247.

In this group the hind femora are more swollen than in the previous groups, while the lower edge is serrate or armed with one or two teeth, thus showing an approach to the *Podagrioninæ*, and through that subfamily to the *Leucospidinæ* and the *Chalcidinæ*.

Some of the species are parasitic upon hymenopterous and dipterous gall-making insects; others, belonging to the genera *Physothorax* and *Plesiostigma*, have been bred from fig-insects, while species belonging to the genera *Diamorus* and *Monodontomerus* are bred commonly from the nests of bees and wasps, and they are said to be parasites of these insects. In a single case, at least, I have *positive* evidence that *Monodontomerus* was bred from the puparium of a tachinid-fly found in the nest with the bee.

TABLE OF GENERA.

1. Females; ovipositor prominently exserted 2
Males 9
2 Hind femora beneath very finely denticulate and usually also with a single large tooth, rarely with 2 teth... 7
Hind femora beneath smooth, with 1 or 2 large teeth, some distance from the apex 3
3. Scutellum *with* a cross furrow before the apex 4
Scutellum *without* a cross furrow before the apex.
Abdomen short, not longer than the head and thorax united; stigmal vein very short.
Holaspis Mayr (type *Torymus militaris* Boheman).
Abdomen elongate, much longer than the head and thorax united; stigmal vein not short, oblique .... **Websterellus** Ashmead (type *tritici*).

4. Abdomen with the hind margin of the first dorsal segment (or its flap) incised at the middle 5

Abdomen with the hind margin of the first dorsal segment straight, *not* incised.
Monodontomerus Westwood (type *M. obscurus* Westw.).

5. Funicle with 6 joints; *head smooth or at most with sparse punctures* 6

Funicle with 7 joints; head and thorax with large, thimble-like punctures.

Hind femora with a single tooth beneath towards apex .... **Diamorus** Walker
(type *Torymus armatus* Boheman).

Hind femora with two teeth beneath toward apex .... **Physothorax** Mayr
(type *Diamorus variabilis* Mayr ♀, *Physothorax disciger* Mayr ♂).

6. Thorax delicately shagreened; hind femora with a single indistinct tooth beneath towards apex.
Plesiostigma Mayr (type *P. bicolor* Mayr).

7. Eyes bare; abdomen with the hind margin of the first dorsal segment incised; hind femora usually serrate or with one or two teeth beneath towards apex 8

Eyes hairy; abdomen with the hind margin of the first dorsal segment straight, not incised; hind femora sometimes without a tooth .... **Oligosthenus** Förster (type *Ichneumon stigma* Fabr...

8. Front femora much swollen, the pronotum longer than the mesonotum; antennæ with *two* ring-joints.
Plesiostigmodes Ashmead, g. nov. (type *P. brasiliensis* Ashm.).

Front femora normal, the pronotum shorter than the mesonotum; antennæ with *one* ring-joint.

Hind femora serrate and usually with one tooth beneath; stigmal vein short but distinct, the knob always petiolate; thorax without thimble-like punctures...... **Cryptopristus** Förster
(type *Torymus caliginosus* Walk.).

Hind femora feebly serrate beneath without a tooth; stigmal knob sessile, the stigmal vein not developed; thorax with small, thimble-like punctures...... **Hemitorymus** Ashmead, g. nov.
(type *H. thoracicus* Ashm.).

9. Apterous or with rudimentary wings 16

Winged.

Hind femora beneath towards apex finely serrate and usually also with one or two teeth.... 13

Hind femora beneath smooth with *one* large tooth some distance from the apex 10

10. Scutellum *without* a cross-furrow before apex 11

Scutellum *with* a cross-furrow before apex 12

11. Stigmal vein very short; abdomen concave above................................ **Holaspis** Mayr.

Stigmal vein not short, oblique; abdomen not concave above............... **Websterellus** Ashmead.

12. Hind margin of the first dorsal segment incised at the middle.............................. 13

Hind margin of the first dorsal segment straight, not incised at the middle.
Monodontomerus Westwood.

13. Head smooth, or at the most with sparse punctures; funicle 6-jointed.......................... 14

Head and thorax with rather large, thimble-like punctures.

Hind femora with a single large tooth; stigmal vein not short, the knob moderately large; hind tarsi very long, the first joint long.. **Diamorus** Walker.

Hind femora with two rather small teeth (normal form); stigmal vein very short, the knob very small; hind tarsi not especially long, the first joint not longer than 2 and 3 united.
Physothorax Mayr.

14. Eyes bare; hind margin of first abdominal segment usually incised medially.................. 15

Eyes hairy; hind margin of the first abdominal segment straight, not incised; hind femora usually without a tooth .... **Oligosthenus** Förster.

15. Front femora much swollen, the hind femora finely serrate beneath; antennæ with 2 ring-joints. **Plesiostigmodes** Ashmead, g. nov. (type *P. brasiliensis* Ashm.).

Front femora normal, the hind femora finely serrate beneath and often with a tooth; antennæ with 1 ring-joint.

Stigmal vein distinct, its knob always petioled........................ **Cryptopristus** Förster.

Stigmal vein very short, its knob sessile........................ **Hemitorymus** Ashmead.

16. Antennæ inserted close together.

Antennæ 2-jointed, the second clavate (dimorphic form).... **Plesiostigma** Mayr, *Nannocerus* Mayr.

Antennæ 4- to 7-jointed; thorax not depressed; hind femora with 2 teeth beneath towards apex; hind tibiæ with spines only at base of tarsi (dimorphic form).......... **Physothorax** Mayr.

SUBFAMILY IV. PODAGRIONINÆ.

This group in having the hind femora greatly swollen and dentate beneath, with the hind tibiæ curved, resembles the *Chalcididæ*, but otherwise, in the structure of head, side pieces of the thorax, coxæ, and in venation, it is a genuine Torymid, and I have here removed it from the *Chalcididæ*, where late authorities have placed it, to a place in this family.

The genus *Podagrion* is parasitic in the egg-cases of the orthopterous family *Mantidæ*.

TABLE OF GENERA.

Stigmal vein not so short, the knob petiolate; tarsal joints 2–5 very short, transverse, the first joint long; hind femora armed with 4 teeth.................. **Pachytomus** Westwood (type *P. klugianus* Westw.).

Stigmal vein very short, the knob subsessile; tarsal joints 2–5 not short; hind femora armed with from 6 to 8 teeth.. **Podagrion** Spinola (type *P. splendens* Spinola).

SUBFAMILY V. MEGASTIGMINÆ.

1875. Megastigmides, Subtribus, Thomson, Skand. Hym., IV., p. 59.

1899. Megastigminæ, Subfamily IV., Ashmead, Proc. Ent. Soc. Washington, IV., p. 246.

The species falling in this subfamily are easily recognized by the large circular or rounded knob of the stigmal vein.

Species of the genus *Megastigmus* are bred commonly from hymenopterous and dipterous gall-makers (*Cynipidæ* and *Cecidomyiidæ*) and also from the seed capsules of various trees and plants. The group is, therefore, phytophagous as well as parasitic. *Megastigmus spermatotr_phus* Wachtl was bred from the seed of the Douglas spruce, *Pseudotsuga douglasii.* It is identical with *M. pinus* Parfitt, also bred from the seed of a pine and described thirty-six years earlier.

TABLE OF GENERA.

1. Head and thorax smooth or transversely wrinkled or aciculate; mandibles 3-dentate............... 2

Head and thorax neither smooth nor transversely wrinkled or aciculate, but sparsely or very finely punctate; mandibles 4-dentate.

Abdomen distinctly petiolate, the petiole the length of the metathorax, the body short, elliptical, not compressed, shorter than the thorax; scutellum *without* a cross-furrow before tip.
Odopoia Walker (type *O. atra* Walker).
Abdomen subsessile, the body elongate, subcompressed, the length of the thorax; scutellum *with* a cross-furrow before apex...... **Bootania** Dalla Torre (type *Metamorpha leucospoides* Walker).
2. Head seen from in front a little wider than long, the ocelli placed in a slight curved line; scutellum with a cross-furrow before apex........... **Megastigmus** Dalman (type *Ichneumon dorsalis* Fabricius.

SUBFAMILY VI. ORMYRINÆ.

1856. Ormyroidæ, Familie X., Förster, Hym. Stud., II., pp. 19, 22 and 24.
1875. Ormyrides, Subtribus, Thomson, Skand. Hym., IV., p. 100.
1899. Ormyrinæ, Subfamily V., Ashmead, Proc. Ent. Soc. Wash., IV., p. 247.

Dr. Arnold Förster was the first to separate this group from other Torymids. It is a very distinct and compact subfamily, agreeing with the subfamily *Toryminæ* in venation and in pleural and pedal characters, but otherwise it is totally different from it and the others. The females are easily recognized by the elongate, pointed, or conically produced abdomen, non-prominent ovipositor, and by its peculiar sculpture; the males by the oblong oval shape of the abdomen, as well as by the sculpture.

It shows some affinity with the *Eurytomidæ*, and particularly with my tribe *Rileyini*, in the shape of the pronotum, and in antennal and abdominal peculiarities.

All are bred from hymenopterous and dipterous gall-insects, belonging principally to the families *Cynipidæ* and *Cecidomyiidæ*; only a few species have been described.

Only three genera are known distinguished as follows:

TABLE OF GENERA.

1. Males; abdomen oblong, depressed 4
Females; abdomen long, conically pointed and more or less compressed, especially towards the apex, the ovipositor never prominent.. 2
2. Abdomen *without* a peculiar sculpture, normal 3
Abdomen *with* a peculiar sculpture, and some of the segments with two rows of pits or deep punctures.
No large, coarse punctures at base of middle abdominal segments; antennæ with *one* ring-joint .... **Monobæus** Förster (type *M. cingulatus* Först.).
With large, coarse punctures at base of middle abdominal segments; antennæ with *two* ring-joints .... **Ormyrus** Westwood (type *O. punctiger* Westw.).
3. Abdomen finely punctate; antennæ with *three* ring-joints. **Tribæus** Förster (type *T. punctulatus* Först.).
4. Abdomen *without* a peculiar sculpture.. 5
Abdomen *with* a peculiar sculpture.
Antennæ with *one* ring-joint.. **Monobæus** Förster.
Antennæ with *two* ring-joints.. **Ormyrus** Westwood.
5. Antennæ with *three* ring-joints.. **Tribæus** Förster.

Family LXII. CHALCIDIDÆ.

1830. Chalcidæ, Family (partim), Leach, Edinb. Encyc., IX., p. 144.

1840. Chalcidæ, Subfamily I. (partim), Westwood, Intro. Mod. Class. Ins., I., p. 166, Synop., p. 65.

1846. Chalcididæ, Family II. (partim), Walker, List Chalc. Brit. Mus., I., p. 2.

1856. Chalcidoidæ, Familie II., Förster, Hym. Stud., II., pp. 18, 21 and 29.

1875. Chalcidina Tribus, Thomson, Hym. Skand., IV., pp. 11, 12.

1886. Chalcidinæ, Subfamily (partim), Howard, Ent. Amer , I., p. 197.

1897. Chalcididæ, Family LXII., Ashmead, Proc. Ent. Soc. Washington, IV., p. 245.

1900. Chalcididæ, Family LXII., Ashmead, Proc. U. S. National Museum, XXIII., p. 202.

This family, although allied to the *Torymidæ* and to the *Eurytomidæ*, is very distinct in many particulars; by the usually very long, subcylindrical hind coxæ, the greatly swollen hind femora, usually dentate or serrate beneath, by the strongly arcuate hind tibiæ which are usually obliquely truncately produced at apex, so that the tarsi appear to be attached a little before the tips, and by pronotal and abdominal differences.

The group is most extensively represented in South America, where many genera and many species have been discovered.

Two subfamilies have been recognized, distinguishable as follows:

TABLE OF SUBFAMILIES.

Front wings longitudinally folded; ovipositor curving upwards and backwards over the dorsum of the abdomen. . . . . Subfamily I. Leucospidinæ.

Front wings not folded; ovipositor when prominent, straight, not curving over the dorsum of the abdomen. . . . . Subfamily II. Chalcidinæ.

Subfamily I. Leucospidinæ.

1833. Leucopsidæ, Family, Walker, Ent. Mag., II., p. 13.

1839. Leucospidæ, Family XV., Haliday, Hym. Synop., p. ii.

1846. Leucospidæ, Family I., Walker, List Chalc. Brit. Museum, I., p. 1.

1856. Leucospoidæ, Family I., Förster, Hym. Stud., II., pp. 18, 20 and 29.

1886. Leucospinæ, Subfamily, Howard, Ent. Amer., I., p. 197.

1897. Leucospidinæ, Subfamily I., Ashmead, Proc. Ent. Soc. Wash., IV., p. 235.

Dr. von Dalla Torre, in his Catalogus Hymenopterorum, Vol. V., has incorrectly credited this subfamily to Förster; it should be credited to Walker, who designated it as a family as early as 1833.

The group is a natural one, and is very distinct from the other groups of the *Chalcididæ*, in habits, in abdominal peculiarities — the ovipositor being curved forward over the dorsum of the abdomen, often reaching to the scutellum, and in having the wings longitudinally folded as in the *Vespidæ*, *Eumenidæ* and in the Diapriid genus *Galesus*.

The group is parasitic in the nest of bees and the longitudinal fold in the wings is significant, for the leucospid is thus enabled to crawl into the nest of a bee without seriously disturbing its contents.

The group was monographed by Dr. August Schletterer in 1890, in the Berliner Entomologische Zeitschrift, vol. 35. This work should be in the hands of all students who desire to study these insects.

TABLE OF GENERA.

1. Frons anteriorly *not* cornuted; hind margin of the head not curved inwardly; third joint of antennæ at least as long as the second, usually, however, distinctly longer; pronotum anteriorly as broad as behind; scutellum never cordate.. 2

Frons anteriorly bicornuted; hind margin of the head curved inwardly; third joint of antennæ smaller than the following; pronotum narrowed anteriorly; scutellum cordate.
Marres Walker (type *M. dicomas* Walker).

2. Abdomen more or less compressed, rounded or vertically angular posteriorly, but never pointed; ovipositor extends from beneath the venter aud curves over the tip of the abdomen backwards, reposing upon the dorsum, sometimes extending to the scutellum; hind coxæ without a tooth above; maxillary palpi distinct, 4-jointed.. 3

Abdomen more fusiform and not distinctly compressed, the paunch followed to the dorsum, with a long channel and with the apex pointed; ovipositor confined to the under surface of the abdomen and not extending further than to its tip; hind coxæ with a strong erect tooth above; maxillary palpi 3-jointed, short and slender.........**Polistomorpha** Westwood (type *P. surinamensis* Walker).

3. Front coxæ not especially long, much shorter than their femora, the tibiæ as long as the femora; middle tibiæ without a tooth at apex; hind tibiæ at apex normal, with 2 spurs.
Leucospis Fabricius (type *L. dorsigera* Fabricius).

Front coxæ very elongate, nearly as long as their femora, the tibiæ shorter than the femora; middle tibiæ with a tooth at apex; hind tibiæ curved and acutely produced into a spine at apex.
Exoclænus Shipp (type *Leucospis anthidioides* Westw.).

SUBFAMILY II. CHALCIDINÆ.

1835. Chalcididæ, Family, Walker, Ent. Mag., II., p. 20.
1839. Chalcididæ, Family XVI., Haliday, Hym. Synop., p. ii.
1856. Chalcidoidæ, Familie, Förster, Hym. Stud., ii., p. 29.
1897. Chalcidinæ, Subfamily II., Ashmead, Proc. Ent. Soc. Wash., IV., p. 247.

In having the hind femora greatly swollen and usually dentate or serrate, this subfamily agrees with the *Leucospidinæ*, but differs in having the front wings not folded longitudinally in repose, by having a much smaller pronotum, and quite a different shaped abdomen, the ovipositor, when prominent, being straight and never curved forward over the dorsum.

I have divided it into four tribes, which may be distinguished by the characters made use of in the following table :

TABLE OF TRIBES.

1. Abdomen sessile 2
   Abdomen petiolate.. 3
2. Postmarginal vein wanting or only slightly developed, the stigmal vein very short, sometimes absent ; antennæ inserted close to the mouth border.. 5
   Postmarginal vein always well developed, the stigmal vein rarely very short.
      Antennæ inserted near the middle of the face, or at least always *above* an imaginary line drawn from the base of the eyes ....Tribe I. Chalcidini.
      Antennæ inserted near the mouth border, or always *below* an imaginary line drawn from the base of the eyes..................................Tribe IV. Haltichellini (partim).
3. Antennæ inserted near the mouth border, or always *below* an imaginary line drawn from the base of the eyes 5
   Antennæ inserted near the middle of the face, or always *above* an imaginary line drawn from the base of the eyes 4
4. Postmarginal vein very long ; ovipositor if prominent not very slender, the eighth dorsal segment often produced into a long compressed stylus......................................Tribe II. Smicrini.
5. Head normal, *not* cornuted.
   Abdomen petiolate..Tribe III. Chalcitellini.
   Abdomen sessile .... Tribe IV. Haltichellini.
   Head abnormal, deeply excavated in front, cornuted ; abdomen petiolate or subpetiolate.
   Tribe V. Dirhinini

TRIBE I. *Chalcidini.*

This group is distinguished by the sessile abdomen and by having the antennæ inserted near the middle of the face or at least never *below* an imaginary line drawn from the base of the eyes.

Through the genus *Acanthochalcis* it is related to the subfamily *Leucospidinæ*, while in the abdominal peculiarities of most of the species the group is much closer allied to the tribe *Haltichellini.*

Most of the genera attack principally lepidopterous insects in the pupal stage. *Phasgonophora,* however, and probably also the allied genera *Trigonura, Stypiura,* etc., prey upon wood-boring coleopterous larvæ.

TABLE OF GENERA.

1. Females 2
   Males 12
2. Scutellum normal, unarmed, although sometimes with a slight median depression towards apex ; if with a slight elevated plate behind, the same is entire, rarely subemarginate 3
   Scutellum posteriorly armed, emarginate or produced 8
3. Abdomen not ending in a long, distinct ovipositor, although the eighth dorsal segment is often much produced, long and compressed, resembling a stylus and enclosing the ovipositor.............. 4

Abdomen ending in a long, distinct ovipositor, which is sometimes as long as the whole body.
Acanthochalcis Cameron (type *A. nigrescens* Cameron).

4. Abdomen much produced at apex, the eighth dorsal segment long, compressed, resembling a stylus 5
Abdomen normal, subglobose or ovate, the eighth dorsal segment never very long 11

5. Scutellum normal, rounded behind, if with a slight plate behind the same is entire, not emarginate 6
Scutellum terminating in a projection or plate posteriorly which is usually emarginate 8

6. Abdomen at base rounded, not truncate 7
Abdomen at base truncate, the truncature bounded by a carina.
Antennæ 13-jointed, the flagellum long, slender, filiform ....**Phasgonophora** Westwood (type *P. sulcata* Westw.).

7. Eighth dorsal abdominal segment produced into a triangular stylus, the second segment (or the first body segment) occupying only about one third the length of the body; antennæ 11-jointed, subclavate ....**Trigonura** Sichel (type *T. crassicauda* Sichel).
Eighth dorsal abdominal segment very long, compressed but not triangular, the second segment variable, usually, however, occupying about half the length of the body; antennæ 11-jointed, filiform, tapering toward tips........................**Thaumatelia** Kirby (type *Chalcis separata* Walker).

8. Scutellum with a short, thick projection behind.. 9
Scutellum ending in a raised emarginate or bidentate plate.
Metathorax unarmed 10
Metathorax with two very prominent projections on each side, and very hairy.
Abdomen with the eighth dorsal segment produced into a long stylus; antennæ 12-jointed.
Megalocolus Kirby (type *Hallicella ducator* Walker).

9. Metathorax with two teeth on each side; hind femora armed with 7 or 8 teeth beneath.
Pseuedocholcis Kirby (type *Halticella declarator* Walk.).
Metathorax produced and excised medially; hind femora unarmed..... **Oxycoryphe** Kriechbaumer. (type *O. subænea* Kriechb.).

10. Marginal vein very short, the postmarginal and the stigmal veins abnormally long; hind femora with numerous small teeth beneath (about 14); abdomen long, conically produced.
Larradomorpha Stadelman (type *L. insignis* Stadelm.).
Marginal vein long, the stigmal vein normal, not very long.
Hind femora armed with one long tooth followed by 6 or 7 smaller teeth; antennæ 11-jointed.
Stypiura Kirby (type *Chalcis conigastra* Perty).
Hind femora with numerous depressed punctures, and with about 6 large teeth beneath; antennæ 13-jointed....................................**Epitelia** Kirby (type *Chalcis stylata* Walker).

11. Antennæ 13-jointed, with 1 ring-jointed, rather short; hind femora armed with many minute teeth beneath..**Chalcis** Fabricius (type *Vespa minuta* Linné).

12. Scutellum posteriorly unarmed, normal 13
Scutellum posteriorly armed, emarginate or produced.. 16

13. Abdomen at base rounded, not truncate... 14
Abdomen at base truncate, the truncature bounded by a carina .... **Phasgonophora** Westwood.

14. Hind angles of metathorax rounded, not prominent.. 15
Hind angles of metathorax prominent, acute, clothed above with usually a silvery white pubescence; thorax coarsely punctate, the abdomen punctate or at least not entirely impunctate; antennæ 11-jointed, the flagellum filiform.......... .... **Acanthochalcis** Cameron.

15. Antennæ 13-jointed, with one ring-joint.. 19
Antennæ 11-jointed, with one ring-joint.
Marginal vein about four times the length of the stigmal vein ; hind femora with 6 moderately large teeth beneath ; antennæ 11-jointed, the flagellum filiform, the first joint shorter than the scape.......................................**Trigonura** Sichel.
Marginal vein long, four or more times longer than the stigmal vein ; hind femora with 8 teeth beneath ; antennæ 11-jointed, the flagellum long, filiform, the first joint longer than the scape.
Thaumatelia Kirby.
16. Scutellum with a short thick projection behind ; metathorax emarginate or armed................ 17
Scutellum ending in a raised emarginate or bidentate plate ; metathorax unarmed................ 18
17. Metathorax produced and excised medially ; hind femora unarmed ...... **Oxycoryphe** Kriechbaumer.
Metathorax usually with two teeth on each side (rarely normal) ; hind femora armed with 7 or 8 teeth beneath..**Pseudochalcis** Kirby.
18. Antennæ 11-jointed ; marginal vein long, the stigmal vein normal, not very long.
Hind femora armed with one large tooth, followed by 6 or 7 smaller teeth... **Stypiura** Kirby.
Hind femora with numerous depressed punctures and with 6 large teeth ....**Epitelia** Kirby.
Antennæ (?) 12- or 13-jointed ; marginal vein *very* short, the stigmal vein abnormally long ; hind femora with numerous small teeth beneath (about 14)................**Larradomorpha** Stadelman.
19. Hind femora armed with many small teeth beneath...........................**Chalcis** Fabricius.

TRIBE II. *Smicrini.*

This tribe approaches nearest to the tribe *Chalcidini*, but is at once separated from it by having the abdomen always distinctly petiolate, never sessile, and by having the hind coxæ abnormally long, as compared with those in the *Chalcidini*.

The species are principally parasitic upon lepidopterous larvæ, although some will attack other insects.

TABLE OF GENERA.

1. Females.. 2
Males 23
2. Middle tibiæ *without* an apical spur.. 3
Middle tibiæ *with* an apical spur.. 4
3. Antennæ 12- or 13-jointed ; thorax black ; abdomen ovate or conic-ovate, the second segment shorter, not occupying nearly the whole surface ; hind femora armed with many minute teeth.
Smicra Spinola (type *Chalcis sispes* Fabr.).
Antennæ 14-jointed ; thorax mostly yellow or marked with yellow, never wholly black ; abdomen conically produced, the second segment large, occupying most of the surface ; hind femora armed with 6 teeth of moderate size..........................**Epitranus** Walker (type *E. fulvescens* Walk.).
4. Hind femora armed with one large or moderately large tooth near base followed by many small or minute teeth, 10 or more in number.. 5
Hind femora armed with from 3 to 9 teeth, the teeth usually *large*.............................. 14
5. Metathorax unarmed 6
Metathorax armed with from two to four teeth or projections 10
6. Scutellum at apex simple, *unarmed*, *without* an elevated plate, teeth or spines.................. 7
Scutellum at apex armed, *with* an elevated plate, which is usually emarginate or bidentate 13

7. Metathorax *without* lateral teeth or projections.. 8

Metathorax *with* lateral teeth or projections.. 10

8. Abdomen produced, the eighth segment in female greatly lengthened into a long compressed stylus; antennæ 13-jointed.....................**Eustypiura** Ashmead, gen. nov. (type *E. bicolor* Ashm.).

Abdomen conic-ovate or fusiform, the eighth segment in female normal or nearly, not produced into a stylus; antennæ 13-jointed.

Petiole of abdomen very long and slender, as long as the thorax or nearly, or at least twice as long as the metathorax.. 9

Petiole of abdomen usually short and stout, never very long or slender; scape of antennæ normal, not extending beyond the ocelli **Spilochalcis** Thomson (type *Chalcis xanthostigma* Dalm.).

9. Scape of antennæ abnormal, very long and usually clavate, extending far above the ocelli, its apex beneath sometimes excavated and enclosing the base of the flagellum; abdominal petiole slender and of a uniform thickness throughout **Ceratosmicra** Ashm., gen. nov. (type *C. petiolata* Ashm.).

Scape of antennæ slender, cylindrical, not or scarcely reaching beyond the ocelli; abdominal petiole thickest at the middle, tapering off towards each end..............**Sayiella** Ashmead, gen. nov. (type *Smicra debilis* Say.).

10. Scutellum normal, unarmed 11

Scutellum at apex bidentate or with an emarginate plate or ridge.

Metathorax quadridentate (two teeth on each side of the petiole); body of abdomen short ovate, the petiole shorter than the thorax; antennæ 13-jointed, the flagellum filiform, clothed with a dense, short pubescence, the scape short, subcompressed.**Xanthomelanus** Ashmead, gen. nov. (type *Chalcis dimidiata* Fabr.).

11. Metathorax bidentate (one tooth on each side of the petiole); thorax never wholly black; antennæ 13-jointed 12

Metathorax quadridentate (two teeth on each side of the petiole); thorax sometimes wholly black; scape of antennæ long, extending beyond the ocelli.

Thorax wholly black; body of abdomen ovate, the petiole variable in length, usually long and slender, but shorter than the thorax; antennæ 13-jointed, the flagellum filiform, the scape at tip beneath not excavated... **Melanosmicra** Ashmead, gen. nov. (type *M. immaculata* Ashm.).

Thorax yellow or yellow marked with black; body of abdomen usually conical, the petiole long; antennæ 13-jointed, the scape at apex beneath excavated.
Ceratosmicra Ashmead (partim).

12. Scape of antennæ normal; body of abdomen in female fusiformly pointed or conic-ovate, the petiole very short, not or rarely longer than thick..........................**Spilochalcis** Thomson (partim).

Scape of antennæ usually long and extending much beyond the ocelli; body of abdomen ovate, the petiole very long and slender, as long or nearly as the thorax.... **Mischosmicra** Ashmead, gen. nov. (type *M. Kahlii* Ashm.).

13. Metathorax normal or with one small tooth on each side of the petiole; abdomen variable, subglobose, conic-ovate or fusiform, but rarely ending in a stylus; antennæ 13-jointed.
Spilochalcis Thomson (partim).

14. Antennæ 13- or 14-jointed 15

Antennæ 12-jointed.

Metathorax posteriorly quadridentate..........**Thaumapus** Kirby (type *Smicra decora* Walk.).

15. Antennæ 13-jointed 16

Antennæ 14-jointed; hind coxæ usually with a leaf-like expansion at apex, their femora armed with large or moderate sized teeth .... **Epinæus** Kirby (type *Smicra dux* Walker).

16. Hind femora armed with 8 large teeth or less.................... 17
Hind femora armed with 9 moderately large teeth.
Scutellum sometimes unarmed but usually ending in a bidentate plate.
Enneasmicra Ashmead, gen. nov. (type *Smicra exinamius* Walk.).

17. Hind femora armed with 7 large teeth or less.................... 19
Hind femora armed with 8 large or moderate sized teeth (the 8th tooth sometimes reduced in size or followed by one or two minute teeth, or the 6th tooth is tridentate at apex).
Mesonotum *with* distinct parapsidal furrows, or at least distinct anteriorly.............. 18
Mesonotum *without* distinct parapsidal furrows.
Abdomen fusiformly pointed, the petiole very short; hind femora about 2½ times as long as wide.......................... **Protoceras** Kirby (type *Smicra leucotelus* Walk.).

18. Scutellum at apex usually ending in an emarginate or bidentate plate; abdomen in female lanceolate or conically produced; the 8th segment often long, styliform.
Octosmicra Ashmead, gen. nov. (type *O. laticeps* Ashm.).

19. Hind femora armed with 6 large teeth or less.................... 20
Hind femora armed with 7 large teeth, the seventh usually much reduced in size.
Abdomen in female conically produced or fusiform, the 8th segment sometimes styliform or produced into a stylus, the petiole not short; mandibles in ♀ bi- in ♂ tri-dentate.
Heptasmicra Ashmead, gen. nov. (type *Smicra obliterata* Walk.).

20. Hind femora armed with 5 large teeth or less.................... 21
Hind femora armed with 6 large teeth (the 6th tooth sometimes broad and at apex 3-dentate).
Metathorax armed with two triangular teeth and a lamina or plate just behind the insertion of the hind wings, the latter extending slightly over the metapleura, the sculpture coarse; teeth of hind femora short and stout......... **Diplodontia** Ashmead (type *Smicra carolina* Ashm.).
Metathorax usually, but not always, armed with two, not very prominent, teeth, but *without* the lamina or plate behind the insertion of the hind wings, the sculpture alveolate; teeth of hind femora large, long.
Abdomen in female subglobose or short ovate, the petiole always more than twice longer than thick.................... **Metadontia** Ashmead (type *Smicra montana* Ashm.).
Abdomen in female lanceolate or fusiformly produced, longer than the head and thorax united, the petiole very short, not longer than thick.
Hexasmicra Ashmead, gen. nov. (type *Smicra transversa* Walk.).

21. Hind femora armed with 4 large teeth or less.................... 22
Hind femora armed with 5 large teeth.
Eyes very large, occupying nearly the whole sides of the head; mandibles broad, 3-dentate; scutellum usually ending in an emarginate or bidentate plate; metathorax alveolate.
Pentasmicra Ashmead, gen. nov. (type *P. brasiliensis* Ashm.).

22. Hind femora with 4 large teeth; metathorax usually with teeth or projections, rarely unarmed; plate at apex of scutellum bidentate or broadly emarginate; abdomen ovate or conic-ovate, rarely fusiform, the eighth segment in female never very long........**Tetrasmicra** Ashmead, gen. nov (type *Smicra concitata* Walk.).
Hind femora with 3 large teeth.............. **Trismicra** Ashmead, g. nov. (type *S. contracta* Walk.).

23. Middle tibiæ *without* an apical spur.................... 24
Middle tibiæ *with* an apical spur.................... 25

24. Antennæ 12- or 13-jointed; thorax black; hind femora armed with many minute teeth.. **Smicra** Spinola.
Antennæ 14-jointed; thorax yellow or yellow marked with black; hind femora armed with 6 teeth. **Epitranus** Walker.

25. Hind femora armed with one large tooth near base followed by many small or minute teeth, from 10 to 20 or more.................. 26
Hind femora armed with from 3 to 9 large teeth.................. 30

26. Metathorax armed with from 2 to 4 teeth or projections.................. 29
Metathorax unarmed.
    Scutellum at apex unarmed, without an emarginate or bidentate plate.................. 27
    Scutellum at apex armed with an emarginate or bidentate plate.

27. Abdominal petiole very long and slender, as long as the thorax or nearly.................. 28
Abdominal petiole usually short and stout, or at least never very long nor very slender.
    Pronotum anteriorly rounded or sloping, not acute; petiole carinate. **Eustypiura** Ashmead.
    Pronotum anteriorly acute; petiole not carinate.................. **Spilochalcis** Thomson.

28. Scape of antennæ abnormal, long and clavate, extending far above the ocelli. **Ceratosmicra** Ashmead.
Scape of antennæ slender, cylindrical, not or only slight extending above the ocelli. **Sayiella** Ashmead.

29. Metathorax bi-dentate; a tooth on each side of the petiole.
    Scape of antennæ normal; abdominal petiole not very long nor slender. **Spilochalcis** Thoms. (partim).
    Scape of antennæ usually long and slender, extending much beyond the ocelli; abdominal petiole very long and slender, as long or nearly as long as the thorax. **Mischosmicra** Ashmead.
Metathorax quadridentate; two teeth on each side of the petiole.
    Scutellum at apex, bidentate or with an emarginate plate...... **Xanthomelanus** Ashmead.
    Scutellum at apex normal, unarmed.
        Thorax wholly black; scape of antennæ normal, petiole of abdomen normal. **Melanosmicra** Ashmead.
        Thorax yellow or yellow marked with black; scape of antennæ abnormal; petiole of abdomen very long.
            Scape long and clavate, excavate at apex beneath, extending far above the ocelli. **Ceratosmicra** Ashmead.
            Scape slender, cylindrical and extending only slightly beyond the ocelli. **Sayiella** Ashmead.

30. Antennæ 13- or 14-jointed.................. 31
Antennæ 12-jointed; metathorax quadridentat.................. **Thaumapus** Kirby.

31. Antennæ 13-jointed.................. 32
Antennæ 14-jointed.
    Hind femora armed with large or moderate-sized teeth.................. **Epinæus** Kirby.

32. Hind femora armed with 8 large teeth or less.................. 33
Hind femora armed with 9 moderately large teeth.................. **Enneasmicra** Ashmead.

33. Hind femora armed with 7 large teeth or less.................. 34
Hind femora armed with 8 large teeth.
    Mesonotum *without* distinct parapsidal furrow.................. **Protoceras** Kirby.
    Mesonotum *with* distinct parapsidal furrows.................. **Octosmicra** Ashmead.

34. Hind femora with 6 large teeth or less.................. 35
Hind femora with 7 large teeth.................. **Heptasmicra** Ashmead.

35. Hind femora armed with 5 large teeth or less.. 36
    Hind femora armed with 6 large teeth.
        Metathorax armed with two triangular teeth or projections and a lamina or plate just behind the insertion of the hind wings that extends slightly over the mesopleura; teeth of hind femora short and stout...**Diplodontia** Ashmead.
        Metathorax sometimes armed with two teeth, sometimes unarmed but always without the lamina or plate.
            ? ♂ unknown..**Metadontia** Ashmead.
            ? ♂ unknown..**Hexasmicra** Ashmead.
36. Hind femora armed with 4 large teeth or less.. 37
    Hind femora armed with 5 large teeth....................................**Pentasmicra** Ashmead.
37. Hind femora armed with 4 large teeth...................................**Tetrasmicra** Ashmead.
    Hind femora armed with 3 large teeth.......................................**Trismicra** Ashmead.

Tribe III. *Chalcitellini.*

This tribe is proposed for a small group closely allied to the tribe *Haltichellini*, but is easily distinguished by the distinctly petiolate abdomen.

The group is unknown to the American fauna, although some South American genera in the *Smicrini* come quite close to it; they are, however, easily separated by having the antennæ inserted farther up on the face and not low down close to the mouth, as in this tribe.

TABLE OF GENERA.

1. Females.. 2
   Males.. 4
2. Antennæ 13-jointed.. 3
   Antennæ 11-jointed (the club indistinctly jointed).
       Hind femora with 7 or 8 large teeth.........**Chalcitella** Westwood (type *C. evanioides* Westw.).
3. Hind tibiæ *without* a tooth outwardly near base, the hind femora armed with many very minute teeth.
       Arretocera Kirby (type *Epitranus albipennis* Walk.).
   Hind tibiæ *with* a tooth outwardly near base, the hind femora with one large tooth and then finely serrate beyond.............................**Anacryptua** Kirby (type *Epitranus impulsator* Walk.).
4. Characters as in females.

Tribe IV. *Haltichellini.*

This tribe resembles most closely the tribe *Chalcidini* and is separated from it with dicufflilty, the difference in the insertion of the antennæ alone being the only character that readily distinguishes the two tribes.

In this tribe the antennæ are inserted *close* to the mouth border, the scape being long, while the postmarginal vein is wanting, or rarely very long as in the *Chalcidini* and the *Smicrini*.

TABLE OF GENERA.

1. Females 2
   Males.. 17

2. Hind femora with one or more large teeth or projections beneath, as well as being finely denticulate or serrate.......... 3

Hind femora simple or at most very finely denticulate beneath, without a large tooth or projection 7

3. Metathorax normal, *without* projections.......... 4

Metathorax *with* projections, *i. e.*, spines or teeth on each side posteriorly.......... 14

4. Hind femora with two prominences or elevations beneath and minutely denticulate. **Hockeria** Walker (type *H. dexius* Walk.).

Hind femora not so formed, at the most with one prominence or one tooth, the edges beyond usually finely denticulate or serrate.......... 5

5. Antennæ 13-jointed; scape *without* a tooth beneath near the middle.......... **Neochalcis** Kirby (type *Euchalcis vetuta* Dufour).

Antennæ 11-jointed; scape *with* a tooth beneath near the middle.......... **Euchalcis** Dufour (type *E. miegii* Dufour).

6. Scutellum at apex bidentate; hind femora armed with 11 small teeth beneath; antennæ 11-jointed. **Allocera** Sichel (type *A. bicolor* Sichel).

7. Metathorax normal, *without* projections or teeth.......... 8

Metathorax with projections or teeth on each side.......... 14

8. Scutellum normal, neither bidentate nor spined.......... 9

Scutellum either spined or bidentate at apex.......... 11

9. Hind femora beneath with the edges finely denticulate or serrate, the head normal or not very thin antero-posteriorly.......... 10

Hind femora swollen but the edges beneath simple, not denticulate, the head lenticular and very thin antero-posteriorly, wider than the thorax, the ocelli on a straight line; stigmal vein curved, not short, a little longer than half the length of the marginal vein; costal cell broad; antennæ 13-jointed, with 2 ring-joints.......... **Encyrtocephalus** Ashmead (type *E. simplicipes* Ashm.).

10. Antennæ 13-jointed; abdomen short, the second segment (first body segment) occupying about half the whole surface; hind femora armed with about 12 small teeth.......... **Haltichella** Spinola (type *Chalcis pusilla* Spinola).

Antennæ 12-jointed; abdomen short, the second segment occupying fully half the whole surface; hind femora very minutely denticulate beneath.......... **Conura** Spinola (type *C. flavicans* Spinola).

11. Scutellum at apex bidentate.......... 12

Scutellum at apex produced into a long, stout spine.......... 13

12. Antennæ 12-jointed, very long, the scape long; hind femora unarmed.......... **Antrocephalus** Kirby (type *Haltichella fascicornis* Walk.).

Antennæ 11-jointed, the flagellum very long and slender; hind femora beneath with the apical half or so finely denticulate and often hairy.......... **Stomatoceras** Kirby (type *Halticella liberator* Walk.).

13. Antennæ 11-jointed, the flagellum subclavate, densely pilose; hind femora unarmed. **Aspirhina** Kirby (type *Halticella dubitator* Walk.).

Antennæ 12-jointed, the flagellum filiform; hind femora armed with one large triangular tooth, the edges beyond finely serrate.......... **Notaspidium** Dalla Torre (type *Notaspis formiciformis* Walk.).

14. Antennæ 10- or 11-jointed.......... 16

Antennæ 12-jointed.

Wings not variegated.......... 15

Wings variegated.

Metathorax with a stout spine on each side; abdomen with the second segment occupying half the whole surface.......... **Trichoxenia** Kirby (type *Halticella cineraria* Walk.).

15. Metathorax long with a long projection on each side posteriorly; abdomen not longer than the thorax, subcompressed at the sides, the second segment long; subcostal vein ending in a knob, the marginal, postmarginal and stigmal veins not developed.. ..**Hybothorax** Ratzeburg (type *H. graffii* Ratzeb.).

Metathorax short, ending in two long divergent spines; abdomen oval, acute at apex, the second segment long; marginal vein present; the stigmal vein short, not distinct.
Kriechbaumerella Dalla Torre (type *Cœlops palpebrator* Kriecht).

16. Antennæ 10-jointed.

Postmarginal vein long and slender, the stigmal vein short, its knob subpetiolate; head viewed from in front triangular; abdomen briefly pointed at apex.
Hippota Walker (type *Chalcis pectinicornis* Latr.).

17. Hind femora *with* one or more large teeth or projections beneath, as well as being finely denticulate or serrate.......... 18

Hind femora without a large tooth or projection beneath, simple or smooth, or at the most finely denticulate beneath.......... 21

18. Metathorax normal, *without* projections or teeth.......... 19

Metathorax *with* projections or teeth on each side.......... 28

19. Hind femora with a single large triangular tooth; scutellum produced into an acute spine.

Antennæ 12-jointed.......... **Notaspidium** Dalla Torre.

Hind femora with one or two prominent projections beneath near the middle and finely denticulate or serrate.

Hind femora with one prominence.......... 20

Hind femora with two prominences.......... **Hockeria** Walk.

20. Antennæ 13-jointed.......... **Neochalcis** Kirby.

Antennæ 12-jointed.......... **Euchalcis** Dufour.

21. Metathorax normal, *without* projections.......... 22

Metathorax *with* a projection on each side.......... 28

22. Scutellum normal, neither bidentate nor spined.......... 23

Scutellum either spined or bidentate.......... 25

23. Hind femora beneath with the edges finely denticulate or serrate; head normal, or at least not very thin antero-posteriorly.......... 24

Hind femora beneath smooth, not denticulate.

Head lenticular, very thin antero-posteriorly and wider than the thorax; antennæ normal, 13-jointed, with 2 ring-joints; middle tibiæ slender.......... **Encyrtocephalus** Ashmead.

Head normal; antennæ *abnormal*, 13-jointed, with 1 ring-joint, the pedicel and first two joints of the flagellum each covered above by a broad lamina or horny flap; middle tibiæ clavate.
Schwarzella Ashmead, g. nov. (type *S. arizonensis* Ashm.).

24. Antennæ 13-jointed.......... **Haltichella** Spinola.

Antennæ 12-jointed.......... **Conura** Spinola.

25. Antennæ 11- or 12-jointed.......... 26

Antennæ 13-jointed.

26. Scutellum produced into a long, stout spine.......... 27

Scutellum at apex bidentate or with a median impression.

Antennæ 12-jointed.......... **Antrocephalus** Kirby.

Antennæ 11-jointed.......... **Stomatoceras** Kirby.

27. Antennæ 11-jointed; hind femora unarmed.......... **Aspirhina** Kirby.

Antennæ 12-jointed; hind femora with a large, triangular tooth.......... **Notaspidium** Dalla Torre.

28. Antennæ 10- or 11-jointed.. 30
Antennæ 12-jointed.
Wings not variegated.. 29
Wings variegated..**Trichoxenia** Kirby.
29. Metathorax long, with a long projection on each side posteriorly; subcostal vein ending in a knob, the marginal and stigmal veins not developed..................................**Hybothorax** Ratzeburg.
Metathorax short, ending in two long divergent spines; marginal and stigmal veins present.
Kriechbaumerella Dalla Torre.
30. Antennæ 10-jointed (or 11-jointed with a ring-joint)..............................**Hippota** Walker.

TRIBE V. *Dirhinini.*

This tribe is distinguished from all the others by having the head deeply emarginate and horned. The antennæ are inserted close to the mouth as in the *Haltichellini.*

TABLE OF GENERA.

1. Female.. 2
Males.. 4
2. Ovipositor not exserted; head with *two* horns.. 3
Ovipositor strongly exserted, long; head with *four* horns; antennæ 13-jointed.
Hontalia Cameron (type *H. cœrulea* Cameron).
3. Metathorax strongly bidentate.
Antennæ 12-jointed............................**Dirhinus** Dalman (type *D. excavatus* Dalman).
Antennæ 13-jointed ....**Eniaca** Kirby (type *Chrysis hesperidum* Rossi).
4. Head with *two* horns.. 5
Head with *four* horns.
Metathorax without teeth; antennæ 13-jointed..............................**Hontalia** Cameron.
5. Metathorax strongly bidentate.
Antennæ 12-jointed...**Dirhinus** Dalman.
Antennæ 13-jointed...**Eniaca** Kirby.

FAMILY LXIII. EURYTOMIDÆ.

1830. Cynipsida Leach, Edinb. Encyc., IX., p. 144.
1833. Eurytomidæ, Family I., Walker, Ent. Mag., I., p. 12.
1840. Eurytomides, Subfamily 2, Westwood, Intro. Mod. Class. Ins., II., p. 166; Synop., p. 66.
1846. Eurytomidæ, Family 3, Walker, List Chalc. Brit. Museum, i., p. 8.
1856. Eurytomoidæ, Familie XII., Förster, Hym. Stud., ii., pp. 19, 23, 44.
1875. Eurytomina, Tribus, Thomson, Hym. Skand., IV., pp. 11, 25.
1886. Eurytominæ, Subfamily, Howard, Ent. Amer., I., p. 19.
1897. Eurytomidæ, Family LXIII, Ashmead, Proc. Ent. Soc. Wash., IV, p. 245.

On account of the diversity of habits among the various groups composing this family it is one of the most interesting of all of the families in this great complex to study, except possibly the family *Agaonidæ.*

Some are phytophagous or gall-makers; others live in the nests of bees and wasps; others are parasitic upon gall-making Hymenoptera and Diptera; while still others are genuine parasites on Coleoptera and other insects, and a few, representing my tribe *Rileyini*, destroy the eggs of orthopterous insects.

The family may be separated into five tribes as follows:

TABLE OF TRIBES.

1. Metathorax seen from above short, *not* longer than the scutellum, usually distinctly *shorter*, and somewhat abruptly declivous 4

Metathorax seen from above long, always longer than the scutellum and usually gradually sloping to apex (in a single case quadrate and squarely truncate behind) 2

2. Head *not* cornuted; eyes oval or ovate, not round 3

Head cornuted, much wider than the thorax; eyes round .... Tribe I. Aximini.

3. Marginal vein slender, longer than the stigmal or rarely shorter, but never very stout or stigmated; abdomen most frequently long in both sexes, in female conic-ovate or conically pointed; antennæ dissimilar in the sexes, in females usually subclavate, in males with the joints of the funicle constricted or excised at apex with whorls of long hairs .... Tribe II. Isosomini.

4. Marginal vein short and stout, stigmated, either quadrate or semicircular 6

Marginal vein usually slender, linear, rarely stout, but never stigmated, quadrate, or semicircular 5

5. Antennæ 10- to 12-jointed, with only *one* ring-joint, and dissimilar in the sexes, in females filiform or subclavate, in males with the funicle joints excised or petiolate at apex, with whorls of long hairs or with sparse long hairs .... Tribe III. Eurytomini.

Antennæ 13-jointed, with *two* or *three* ring-joints, and very similar in the sexes, the funicle joints not excised or pedicellate at apex, and without whorls of long hairs .... Tribe IV. Rileyini.

6. Antennæ at the most 11-jointed, with 1 ring-joint, the funicle 4-jointed and very similar in both sexes, filiform or subclavate, without whorls of long hairs; abdomen short, globose, or oval, never very long or strongly compressed; hind tibiæ with rigid bristles behind .... Tribe V. Decatomini.

TRIBE I. *Aximini.*

Mr. Peter Cameron, in Biol. Centr. Amer. Hym., Vol. 1, p. 111, established for *Axima* Walker and *Hontalia* Cameron, the subfamily *Aximinæ*. The two genera, however, have nothing in common, are quite distinct in structural characters and belong to different families. Mr. Cameron was evidently deceived in regard to their relationship by a superficial resemblance in the structure of the heads of these insects. *Axima* is clearly a eurytomid, as I first pointed out several years ago, while *Hontalia* is a chalcidid allied to *Dirhinus*, and must be placed in my tribe *Dirhinini*. *Axima* is parasitic in the nests of the small carpenter bees, *Ceratinidæ*.

TABLE OF GENERA.

1. Females 2

Males 3

2. Marginal vein four or more times longer than the stigmal vein; antennæ 11-jointed, the funicle 6-jointed; abdomen long, lanceolate, compressed .... **Axima** Walker (type *A. spinifrons* Walk.).

Marginal vein hardly twice the length of the stigmal vein; antennæ 11-jointed; abdomen not long, lanceolate.............................**Aximopsis** Ashmead, gen. nov. (type *A. morio* Ashm.).

3. Marginal vein four or more times longer than the stigmal; antennæ 11-jointed, the funicle joints long, binodose, each joint with two whorls of long hairs...........................**Axima** Walker.

Marginal vein hardly twice the length of the stigmal vein.................**Aximopsis** Ashmead.

TRIBE II. *Isosomini.*

All the species falling in this tribe are phytophagous and thus differ in habits from all of the other tribes.

The group approaches very close to the *Eurytomini* and many of the species were at first described under the genus *Eurytoma*. There is, however, a well marked structural difference between them, and the tribe may be easily separated by the characters made use of in my table of tribes. In having a long metathorax and in the antennal characters of most of the genera, the *Isosomini* approach nearest to the *Aximini*, but the horned head in the latter is sufficient to keep them apart.

TABLE OF GENERA.

1. Females... 2

Males... 8

2. Apterous.. 7

Winged.

Marginal vein always longer than the stigmal vein.. 3

Marginal vein shorter than the stigmal vein, the latter very oblique, extending off from the marginal at an angle of thirty degrees.

Head and thorax umbilicately punctate, the frons with a deep antennal furrow; abdomen elongate, conic-ovate, the dorsal segments subequal, as in *Isosoma*.

Isosomodes Ashmead (type *Isosoma gigantea* Ashm.).

3. Metathorax sloping or rounded behind, not abruptly and squarely truncate behind................ 4

Metathorax quadrate, abruptly and squarely truncate behind.

Mesonotum delicately umbilicately punctate; abdomen ovate, slenderer than the thorax, the second segment the longest, the others about of an equal length.

Isosomorpha Ashmead (type *I. europæ* Ashm.).

4. Thorax more or less distinctly umbilicately punctate, punctate or shagreened, opaque, never smooth and shining; antennæ usually 11-jointed, with 1 ring-joint, the funicle 5-jointed................ 5

Thorax smooth and shining, impunctate or at the most feebly microscopically shagreened......... 6

5. Mesonotum umbilicately punctate, punctate or rugulose; abdomen usually long, conically pointed, the segments subequal in length, the fourth not or only slightly longer than the third.

Isosoma Walker (type *Ichneumon verticellata* Fabr.).

Mesonotum with the middle lobe nearly smooth, delicately punctate, with usually delicate transverse aciculations anteriorly; abdomen very long, conically pointed, the fourth segment very long.

Euoxysoma Ashmead (type *Systole brachyptera* Ashm.).

6. Pedicel longer than the first joint of the funicle, the joints of the latter moniliform or nearly; abdomen ovate, with the fourth segment much longer than the others, except the second; postmarginal vein scarcely longer than the stigmal vein............**Isosomocharis** Ashmead (type *I. sulcat* Ashm.).

Pedicel shorter than the first joint of the funicle or no longer, the first three joints of the funicle obconical; abdomen conically pointed, with the segments, except the second, which is the longest, nearly of an equal length (sexual form) .... **Philachyra** Haliday (type *P. ips* Hal.).

7. Mesonotum and scutellum highly polished, impunctate; abdomen conic-ovate, as long as the head and thorax united; antennæ 11-jointed, the funicle 5-jointed, the first joint the longest, obconical, longer than the pedicel (Agamic form).. **Philachyra** Haliday.

8. Marginal vein always longer than the stigmal vein 9

Marginal vein shorter than the stigmal vein.

Head and thorax umbilicately punctate, the former with a deep frontal furrow; flagellum filiform, the joints of the funicle long, three or more times longer than thick, briefly pedicellate at apex, with two whorls of long hairs on each joint .... **Isosomodes** Ashmead.

9. Metathorax not abruptly and squarely truncate behind, either sloping or rounded 10

Metathorax quadrate, abruptly and squarely truncate behind; head and thorax umbilicately punctate. **Isosomorpha** Ashmead.

10. Thorax smooth and shining, impunctate or at the most very feebly, microscopically shagreened... 13

Thorax more or less distinctly umbilicately punctate, finely punctate, or coarsely shagreened, opaque.. 11

11. Head and thorax finely punctate.. 12

Head and thorax more or less umbilicately punctate or coarsely shagreened.

Mesonotum more or less distinctly umbilicately punctate, not finely transversely aciculate anteriorly; funicle joints long, more than thrice longer than thick, constricted or briefly pedicellate at apex, with indistinct whorls of long hairs .... **Isosoma** Walker.

Mesonotum not so punctate, the middle lobe smoother, delicately punctate, with usually delicate transverse aciculations anteriorly................................ **Euoxysoma** Ashmead.

12. Metathorax elongate; abdomen clavate, the petiole slender, punctate, as long as the hind coxæ, the body a little longer than the thorax; antennæ filiform, slender, pubescent. **Aiolomorphus** Walker (type *A. rhopaloides* Walk.).

13. Funicle joints long, subcontracted near the middle and subpetiolate at apex, each joint with two, somewhat irregular, whorls of long hairs................................ **Isosomocharis** Ashmead.

Funicle joints long, petiolate or subpetiolate at apex, with long hairs, but not arranged in two whorls and the joints cylindrical, without a median contraction; abdomen oblong-oval, the petiole rugulose, about twice as long as thick or a little longer, the second segment the longest segment, longer than the third and fourth united, the latter about equal with those beyond .... **Philachyra** Haliday.

TRIBE III. *Eurytomini.*

This is the most extensive tribe in the family and the National Museum collection contains many undescribed species. All of the species are genuine parasites and destroy the larvæ of several orders, Hymenoptera, Diptera, Coleoptera, etc.

Dr. A. D. Hopkins, of the West Virginia State Agriculture College, claims, however, that *Bruchophagus* (*Eurytoma*) *funebris* Howard is phytophagous and states he has proved it by a series of experiments. I think, however, some mistake has been made and I cannot accept Dr. Hopkins' observation as conclusive. Dr. Howard described it as having been bred from *Cecidomyia lugumicola* Lintner, living in clover seed. All the other species, however, belonging to this genus, whose parasitism is known, destroy coleopterous larvæ, and I am inclined to think that both Drs. Howard and Hopkins are wrong, and that *Bruchophagus funebris* is a parasite upon some *Bruchus*, or the larva of a small rhynchophorous beetle living in the clover seed.

The genera are numerous, but it is believed these may be easily recognized by the use of the following table:

TABLE OF GENERA.

1. Females 2

Males 15

2. Non-metallic 3

Metallic green or blue, coarsely, umbilicately punctate.

Head in front quadricarinate (a carina along the inner orbits and bounding the frontal furrow); eyes surrounded by a ring of coarse punctures; antennæ 11-jointed, sometimes appearing only 9-jointed by the union of the club joints; funicle 5-jointed, the joints long, the first the longest, about two-thirds the length of the scape; abdomen conic-ovate, the fifth segment the longest .... **Chryseida** Spinola (type *C. superciliosa* Spinola).

3. Mesonotum distinctly umbilicately punctate 4

Mesonotum not umbilicately punctate, smooth or nearly, shagreened, or at least rugulosely punctate.. 12

4. First joint of the funicle elongate, as long or nearly as the scape, or at least never less than two-thirds the length of the scape 5

First joint of the funicle not especially long, never longer than half the length of the scape, but usually much shorter than that 6

5. Head with a deep antennal channel, the front ocellus lying in it at apex; antennæ 11-jointed, filiform, not or only slightly thickened toward apex.

Abdomen rarely much longer than the head and thorax united, strongly compressed, pointed at apex; seen from the side, the dorsum is strongly convexly elevated, the fifth segment the longest .... **Bephrata** Cameron (type *B. ruficollis* Cam.).

Abdomen very elongate, narrow, lanceolate, compressed, fully twice as long as the head and thorax united, the segments more nearly equal in length.

Aximogastra Ashmead, gen. nov. (type *A. bahiæ* Ashm.).

6. Mesonotum *with* distinct, complete parapsidal furrows 7

Mesonotum *without* parapsidal furrows or the furrows are only indicated anteriorly 14

7. Head sometimes with a deep frontal channel or antennal furrow, but the front ocellus is never placed within it, but always above it near the anterior margin of the vertex 8

Head with a deep frontal channel or antennal furrow, the front ocellus always placed at the apex of this furrow, never above it.

Scape elongate, more than twice longer than the first joint of the funicle, the funicle joints rather long, the first about twice as long as thick; abdomen compressed, not longer than the head and thorax united, ending in a conical point; the dorsum, as seen from the side, is highly convexly elevated; postmarginal vein variable, sometimes shorter than the marginal, but rarely very much longer; hind tibiæ with rather short, stiff bristles behind.

Prodecatoma Ashmead, gen. nov. (type *P. flavescens* Ashm.).

8. Marginal vein always distinctly longer than the stigmal vein, the postmarginal vein well developed, sometimes very long 9

Marginal vein short, not, or scarcely, longer than the stigmal vein, usually a little shorter, the post-marginal vein rarely well developed, rarely as long as the stigmal (in only a single case is it very long) .. 13

9. Hind tibiæ with 2 apical spurs.. 10

Hind tibiæ with 1 apical spur.

Funicle with the joints oval-moniliform ; eyes broadly oval.

Phylloxeroxenus Ashmead (type *Eurytoma phyllexeræ* Ashm.).

10. Postmarginal vein very long, fully twice as long (or even longer) as the stigmal vein.............. 11

Postmarginal vein not much longer than the stigmal vein.

Marginal vein scarcely longer than the stigmal ; antennæ clavate, the club large, 3-jointed, the joints of the funicle moniliform ; abdomen with the fifth segment, as seen from the side, two or more times longer than wide ; head convex in front, the occiput deeply concave.

Eurytomocharis Ashmead (type *E. minuta* Ashm.).

Marginal vein very distinctly longer than the stigmal ; antennæ filiform or nearly, at most subclavate, not greatly thickened towards apex, the joints of the funicle oblong, cylindrical ; abdomen conic-ovate, subcompressed, the fifth segment, as seen from the side, shorter than wide...**Eurytoma** Illiger (type *E. planata* Illig.).

11. Hind tibiæ normal, not dilated.. 12

Hind tibiæ compressed, dilated.

Head transverse, wider than the thorax, and thin antero-posteriorly, the eyes more or less rounded, prominent ; antennæ inserted far above the middle of the face, the scape very long, reaching far above the ocelli and with a tooth or tubercle at apex beneath, the flagellum filiform with sparse hairs, the funicle joints more than twice longer than thick ; abdomen very strongly compressed, the petiole long and slender. **Eudoxinna** Walker (type *Sesxetra transversa* Walk.).

12. Marginal vein at least one and a half times as long as the stigmal vein, the postmarginal vein not longer than the stigmal ; abdomen conic-ovate, longer than the thorax, the fifth segment nearly twice as long as the fourth ; antennæ 11-jointed, the flagellum subclavate, the joints of the funicle submoniliform.............................**Xanthosoma** Ashmead (type *X. nigricornis* Ashm.).

Marginal vein not or scarcely longer than the stigmal vein and stout ; antennæ 11-jointed, the flagellum clavate or subclavate ; abdomen globose, or short ovate, shorter than the thorax, the segments subequal...**Systole** Walker (type *S. albipennis* Walk.).

13. Abdomen short, subglobose, the fourth segment much the longest, enclosing the following.

Systolodes Ashmead (type *S. brevicornis* Ashm.).

Abdomen ovate, subcompressed (the tip sometimes produced into a stylus), the fourth and fifth segments short, although a little longer than the others, and subequal........**Bruchophagus** Ashmead (type *B. borealis* Ashm.).

14. Head with a deep frontal furrow ; abdomen ovate, subcompressed, petiolate, the petiole usually not short, the fifth segment the longest, but not greatly longer than the fourth.

Funicle 5-jointed, the joints moniliform or submoniliform, the first much shorter than the pedicel.............................**Decatomidea** Ashmead (type *D. xanthochroa* Ashm.).

15. Non-metallic, smooth, delicately shagreened or umbilicate punctate, rarely finely punctate....... 16

Metallic green or blue, coarsely umbilicately punctate.

Head in front quadricarinate, the carina along the orbits sometimes delicate ; funicle with the joints excised at apex above, with whorls of long hairs................. **Chryseida** Spinola.

16. Mesonotum closely, distinctly, umbilicately punctate.................................... 17

Mesonotum *not* umbilicately punctate, either smooth or nearly, or shagreened or finely, regularly sculptured.................................... 26

17. First joint of the flagellum long, as long as the scape or longer.................................... 18

First joint of the flagellum not especially long, always much shorter than the scape.................................... 19

18. Head with a deep antennal furrow, the front ocellus placed within the furrow.

? Known to me in ♀ sex only.................................... **Bephrata** Cameron.

? Known to me in ♀ sex only.................................... **Aximogastra** Ashmead.

19. Mesonotum *without* or with incomplete furrows.................................... 28

Mesonotum *with* distinct, complete furrows.

Head sometimes with a deep antennal furrow, but the front ocellus is never situated in the furrow.................................... 20

Head with a deep antennal furrow, the front ocellus always placed in the furrow at its apex. **Prodecatoma** Ashmead.

20. Marginal vein always distinctly longer than the stigmal vein, the postmarginal vein well developed, sometimes very long, always longer than the stigmal.................................... 21

Marginal vein short, not or scarcely longer than the stigmal vein, usually shorter, the postmarginal vein not well developed, not longer than the stigmal.................................... 27

21. Hind tibiæ with 2 apical spurs.................................... 22

Hind tibiæ with 1 apical spur.................................... **Phylloxeroxenus** Ashmead.

22. Postmarginal vein only a little longer than the stigmal vein.................................... 23

Postmarginal vein very long, fully twice as long (or longer) as the stigmal vein.................................... 25

23. Marginal vein always distinctly longer than the stigmal vein.................................... 24

Marginal vein only a little longer than the stigmal.................................... **Eurytomocharis** Ashmead.

24. Funicle 5-jointed, the joints at apex excised above and pedicellate with long, whorled hairs; body of abdomen rather small, subovate, the petiole usually longer than the hind coxæ, the fourth segment, counting the petiole as the first, the longest.................................... **Eurytoma** Illiger.

25. Scape of antennæ long, with a tooth or tubercle at apex beneath; joints of funicle long, slightly contracted at the middle, each joint with two whorls of long bristles.................................... **Eudoxinna** Walk.

26. Marginal vein slender, at least one and a half times as long as the stigmal vein, the postmarginal vein not longer than the stigmal.................................... **Xanthosoma** Ashm.

Marginal vein rather stout, not longer than the stigmal vein; funicle 4-jointed, the joints oval, briefly petiolate at apex, with long, sparse hairs; abdomen small, oval, the petiole about twice as long as thick; dorsal segment 2–4 subequal.................................... **Systole** Walk.

27. Funicle 4-jointed, the joints excised at apex above, the basal or thickened portion about twice as long as thick, with long hairs above; abdomen small, globose, the petiole rugulose, the fourth segment the longest.................................... **Systolodes** Ashmead.

Funicle 4-jointed, the joints briefly pedunculate at apex, with sparse, long, irregular hairs; body of abdomen oval, the petiole short, stout, the fourth segment the largest..... **Bruchophagus** Ashmead.

28. Head with a deep antennal furrow.................................... **Decatomidea** Ashmead.

TRIBE IV. *Rileyini.*

In this tribe the antennæ are alike, or very similar, in both sexes and 13-jointed, with *two* or *three* ring-joints; they are never 12-jointed or less as in the other tribes.

I consider the species composing this tribe to be genuine Eurytomids, but with a *habitus* quite their own and difficult to describe intelligently — the head, pronotum and abdomen being slightly different from those in the *Eurytomini*. The sculpture, too, except in the genus *Neorileya*, is different from other Eurytomids. The shape of the abdomen in some of the species recalls to mind the subfamily *Ormyrinæ*, in the Torymidæ, the species of which have similar antennæ and show same affinity with this tribe.

Macrorileya is parasitic in the eggs of tree-crickets (*Œcanthus* sp.); a species of *Neorileya* was bred by Mr. Urich, in Trinidad, W. I., from an egg of an unknown orthopterous insect; while the species belonging to the genus *Rileya* are parasitic upon the larvæ of various Cecidomyiids.

TABLE OF GENERA.

1. Females.. 2

Males.. 4

2. Head and thorax smooth or nearly or at the most, very finely punctate, or feebly microscopically shagreened.. 3

Head and thorax umbilicately punctate.

Pronotum as wide as the mesonotum, the hind margin arcuately emarginate, straight and truncate in front; mesonotum *without* furrows; axillæ rather small, triangular, widely separated; antennæ 13-jointed, with *two* ring-joints, the flagellum short, not twice the length of the scape, subfiliform, the funicle 6-jointed, the joints subquadrate, hardly as long as wide; marginal vein scarcely longer than the stigmal, shorter than the postmarginal; abdomen oval, depressed, shorter or not longer than the thorax, subconvex above, and briefly petiolate, the fourth segment much the longest, the third very short, the second and fifth about equal, united not longer than the fourth..... **Neorileya** Ashmead, g. nov. (type *N. flavipes* Ashm.).

3. Antennæ with *three* ring-joints.

Pronotum as wide as the mesonotum, the hind margin straight, a little more than twice wider than long and about as long as the mesonotum; parapsidal furrows delicate but complete, or nearly, sometimes obliterated anteriorly; head transverse, a little wider than the thorax; flagellum subclavate, the funicle 5-jointed, joints 3–5 transverse; marginal vein fully twice as long as the stigmal and a little longer than the postmarginal; abdomen subcylindrical, conic-ovate, a little longer than the head and thorax united, almost sessile, the fourth segment very large, occupying most of the surface, the others very short............... **Rileya** Ashmead (type *R. cecidomyiæ* Ashm.).

Pronotum quadrate, a little narrower than the mesonotum and hardly shorter than wide; parapsidal furrows distinct, complete; head transverse, as wide as the thorax across from tegula to tegula, subconcave behind, convex in front, with a frontal excavation for the antennal scape; flagellum subclavate, the funicle 6-jointed, joints 2–6 subquadrate, the last two a little wider than long; marginal vein very long, more than twice longer than the stigmal vein, the postmarginal vein very long and slender; abdomen very long and narrow, lanceolate, subcompressed, nearly twice as long as the head and thorax united, joints 5, 6 and 7 long, the sixth the longest of the three, the eighth projecting and pointed.

Macrorileya Ashmead g. nov. (type *Rileya œcanthi* Ashm.).

4. Antennæ with *three* ring-joints 5

Antennæ with *two* ring-joints.

Head and thorax umbilicately punctate, the parapsidal furrows wanting; pronotum as wide as the mesonotum, the hind margin arcuately emarginate; flagellum filiform, pubescent, the joints subquadrate.. **Neorileya** Ashmead.

5. Head and thorax smooth or nearly, at most very finely punctate or microscopically shagreened, the parapsidal furrows sometimes delicate but distinct.

Pronotum as wide as the mesonotum, more than twice wider than long; abdomen ovate, the fourth segment very long; flagellum filiform, pubescent, the joints of the funicle nearly equal, a little wider than long.. **Rileya** Ashmead.

Pronotum quadrate, nearly as long as wide and a little narrower than the mesonotum; abdomen elongate, cylindrical, as long as the head and thorax united, the segments subequal; flagellum subclavate, gradually thickened towards the tip, the last two joints of funicle transverse.

Macrorileya Ashmead.

TRIBE V. *Decatomini.*

This tribe is very closely allied to the tribe *Eurytomini*, but is readily separated from it and the other tribes by the much thickened or stigmated marginal vein, and by the antennæ being alike, or very similar, in both sexes. The hind tibiæ are always armed with rigid bristles behind. Some of the *Eurytomini*, however, also have similarly armed tibiæ, so that this character in itself is not sufficient to distinguish the group.

All the species are parasitic upon hymenopterous and dipterous gall-makers. (*Cynipidæ* and *Cecidomyiidæ*).

Only two genera fall into this tribe, distinguished as follows:

TABLE OF GENERA.

1. Females.. 2

Males 3

2. Wings hyaline, with a dusky submarginal blotch or band; antennæ 9-jointed, with one ring-joint, the club usually not jointed, if with 3 indistinct joints, 11-jointed, pedicel obconical, nearly thrice as long as thick at apex. .... **Decatoma** Spinola (type *Diplolepis adonidum* Rossi).

Wings hyaline, without a dusky submarginal blotch; pedicel shorter, not or hardly twice as long as thick at apex .... **Eudecatoma** Ashmead (type *E. batatoides* Ashmead).

3. Wings hyaline, *with* a dusky or fuscous submarginal blotch or band .... **Decatoma** Spinola.

Wings hyaline, *without* a dusky submarginal blotch; all femora considerably swollen.

Eudecatoma Ashmead.

FAMILY LXIV. PERILAMPIDÆ.

1846. Eucharidæ, Family (partim), Walker, List Chalc. Brit. Museum, I., p. 103.

1856. Perilampoidæ, Family IX., Förster, Hym. Stud., II., pp. 19, 22 and 46.

1875. Perilampina, Tribus, Thomson, Hym. Skand., IV., pp. 11, 22.

1886. Perilampinæ, Subfamily, Howard, Ent. Amer., I., p. 198.

1897. Perilampidæ, Family LXIV., Ashmead, Proc. Ent. Soc. Washington, IV., p. 245.

Francis Walker placed this family with the *Eucharidæ*, with which it is unquestionably closely allied. It is, however, easily separated from the *Eucharidæ* by many salient differences, and I agree with Dr. Förster in considering it a distinct family. It has some affinities allying it with the family *Miscogasteridæ*, the affinities existing also in the *Eucharidæ* and particularly through Cameron's genus *Orasema*.

Chrysolampus Spinola belongs to this family and not with the *Pteromalidæ*, where Dr. Von Dalla Torre has placed it. His changing the well-known subfamily *Sphigigasterinæ* into *Chrysolampinæ*, is therefore unnecessary and unwarranted. *Chrysolampus* is identical with *Lamprostylus* Förster.

The group attacks principally Lepidoptera, but will also attack other insects, as I have bred *Perilampus* sp. from Chrysopa cocoons.

The genera are not numerous and are characterized in the following table:

TABLE OF GENERA.

1.	Abdomen petiolate	6
	Abdomen sessile or subsessile	2
2.	Scutellum normal, although sometimes very large, not produced into a long spine	3
	Scutellum produced into a long spine	**Euperilampus** Walker (type *Perilampus gloriosus* Walk.).
3.	Thorax smooth, not coarsely punctate	5
	Thorax coarsely punctate.	
	Antennæ 13-jointed	4
	Antennæ 9-jointed (teste Kriechbaumer)	**Sericops** Kriechbaumer (type *S. fasciata* Kriechbaumer).
4.	Flagellum very short, compacted into a short club	**Philomides** Haliday (type *P. paphius* Haliday).
	Flagellum not very short, at the most subclavate	**Perilampus** Latreille (type *Cynips italica* Fabricius).
5.	Antennæ inserted below the middle of the face, 13-jointed; stigmal and postmarginal veins abbreviated.	**Chrysomalla** Förster (type *C. roseri* Förster).
6.	Antennæ simple	7
	Antennæ pectinate. ♂ (♀ unknown)	**Aperilampus** Walker (type *Perilampus discolor* Walker).
7.	Metathorax thickly and deeply punctate	**Chrysolampus** Spinola = *Lamprostylus* Förster (type *C. splendidula* Spinola).
	Metathorax not so punctured, smooth or with only a few punctures	**Elatus** Walker (type *E. lhenæ* Walker).

FAMILY LXV. EUCHARIDÆ.

1846. Eucharidæ, Family 5 (partim), Walker, List. Chalc. British Museum, I., p. 21.

1856. Eucharoidæ, Familie 8, Förster, Hym. Stud., II., pp. 18, 22 and 42.

1886. Eucharinæ, Subfamily, Howard, Ent. Amer., I., p. 198.

1897. Eucharidæ, Family LXV., Ashmead, Proc. Ent. Soc. Washington, IV., p. 235.

1899. Eucharidæ, Family LXV., Ashmead, *loc. cit.*, p. 245.

1900. Eucharidæ, Family LXV., Ashmead, Proc. U. S. National Museum, XXIII., p. 202.

In this family are found some of the most singular looking and wonderfully shaped Chalcids known, the structure of the thorax, and particularly of the scutellum, being most wonderfully and curiously modified and developed; and this development, in connection with the brilliant metallic green and blue colors of its members, makes the group the most striking and attractive of any in the Superfamily. Some of the species are now known to be parasitic upon ants and probably the whole group attacks these insects. In temperate regions the family is poorly represented, but in tropical countries, where ants most abound and flourish in enormous colonies, these insects are not rare and seem to have reached a very highly specialized development.

The known genera may be tabulated as follows:

TABLE OF GENERA.

1. Females.......... 2
Males.......... 21

2. Antennæ 13-jointed or less.......... 3
Antennæ 14-pointed or more.
Scutellum simple; antennæ 16–18-jointed.....**Eucharissa** Westwood (type *E. speciosa* Westw.).
Scutellum produced posteriorly into a spine which is longitudinally striate; antennæ 14-jointed.
Saccharissa Kirby (type *Eucharis contingens* Walker).

3. Scutellum simple, neither bidentate nor produced into long processes.......... 4
Scutellum bidentate or produced posteriorly into long processes over the abdomen.......... 11

4. Antennæ moniliform.......... 5
Antennæ not moniliform.......... 6

5. Abdomen compressed, ascending..........**Eucharis** Latreille (type *Cynips adscendens* Fabr.).
Abdomen neither compressed nor ascending.
Hind tarsi with the first joint much thickened; antennæ 11-jointed..........**Tricoryna** Kirby (type *Eucharis jello* Walt.).
Hind tarsi with the first joint very long, but not thickened..........**Metagea** Kirby (type *Eucharis Zalates* Walk.).

6. Joints of antennæ not serrate, cylindrical.......... 7
Joints of antennæ serrate or subdentate.......... 9

7. Antennæ 13-jointed, the joints short.......... 8
Antennæ 11-jointed, the joints long.
Thorax smooth, polished; petiole of abdomen abruptly enlarged at apex.
Pseudometagea Ashmead (type *Metagea schwarzii* Ashm.).
Thorax rugose; petiole of abdomen normal, long and cylindrical..........**Psilogaster** Blanchard (type *P. cupreus* Blanchard).

8. Thorax not greatly elevated, similar to *Chrysolampus* in the Perilampidæ, punctate and with complete parapsidal furrows; mandibles long, acute at apex, the right mandible with *two* teeth within, the left with *one* tooth within..........**Orasema** Cameron (type *O. stramineipes* Cam.).

9. Antennæ 11-jointed 10
   Antennæ 13-jointed .... **Rhipipallus** Kirby (type *Eucharis volusus* Walk.).
10. Scutellum rounded, not conically elevated posteriorly; wings hyaline. **Pseudochalcura** Ashmead g. nov. (type *Eucharis gibbosa* Provancher).
   Scutellum subconically elevated posteriorly; wings with a substigmal cloud or fascia. **Chalcura** Kirby (type *Eucharis deprivata* Walk.).
11. Scutellum with the processes very long, usually as long as the abdomen and sometimes very broad, forming a shield over the abdomen, or conically produced 13
   Scutellum bidentate, the processes never very long.
      Metathorax armed with strong lateral projections or teeth 12
      Metathorax unarmed, without teeth.
         A hump-like elevation above the metapleura .... **Stilbula** Spinola (type *Ichneumon cynipiformis* Rossi).
         No hump-like elevation above the metapleura .... **Schizaspidia** Westwood (type *S. furcifera* Westw.).
12. Metathoracic processes curving downwards........ **Lophyrocera** Cameron (type *L. stramineipes* Cam.).
   Metathoracic processes consisting of two diverging horizontal teeth .... **Tetramelia** Kirby (type *Schizaspidia plagiata* Walk.).
13. Scutellum not conically produced 14
   Scutellum conically produced over the abdomen.
      Head with a deep antennal furrow; hind femora very broad; abdomen subsessile, fusiform, depressed .... **Destefania** Dalla Torre (type *Sternodes Pasateri* De Stef.).
14. Scutellar processes long and slender, generally curving inward toward tips 18
   Scutellar processes very broad and covering the entire abdomen.
      Thorax not pubescent, the apex of the scutellar processes simple, or cleft or notched....... 15
      Thorax pubescent, the apex of the scutellar processes rounded and not sharply cleft, the notch extending two thirds the entire length 17
15. Scutellar processes long, broad and contiguous, but very flat, the extremities rounded, subtruncate, or furnished with two rounded short spines 16
   Scutellar processes not so shaped.
      Scutellar processes very broad, triangular .... **Thoracantha** Latreille (type *T. latreillei* Guérin).
      Scutellar processes long, contiguous and acutely pointed at tips, longitudinally striate. **Uromelia** Kirby (type *Thoracantha striata* Perty).
16. Mesonotum and scutellum medially impressed; head almost as wide as the thorax; antennæ 10-jointed, the third joint as long as the scape, the following much wider than long..... **Dicœlothorax** Ashmead (type *D. platycerus* Ashm.).
   Mesonotum and scutellum not so impressed, the scutellar processes having the basal portion as wide as the thorax, briefly compressed in the center, then dilated and at the apex furnished with two rounded short spines .... **Lætocantha** Shipp (type *Thoracantha nasua* Walk.).
17. Antennæ 10-jointed, the first funicle joint the longest, the following short.......... **Dilocantha** Shipp (type *Thoracantha flavicornis* Walk.).
18. Head and eyes normal, not tuberculate 19
   Head and eyes tuberculate.
      Antennæ 12-jointed .... **Isomeralia** Shipp (type *Thoracantha coronata* Westw.).
19. Antennæ 11-jointed, the third joint not much longer than the fourth 20

Antennæ 10-jointed, the third joint very long, as long as all of the other joints united.
Lirata Cameron (type *L. luteogaster* Cam.).

20. Thorax not pubescent, the scutellum always longitudinally striate................**Kapala** Cameron (type *Eucharis fuscata* Fabr.).
Thorax clothed with a fine pubescence, the scutellum smooth, not longitudinally striate, the processes smooth to their apices, where they are transversely serrate................**Lasiokapala** Ashmead (type *L. serrata* Ashm.).

21. Scutellum spined, bidentate or produced into long processes extending over the scutellum........ 22
Scutellum normal, simple.. 23

22. Scutellum bidendate or produced into long processes that extend over the abdomen.............. 28
Scutellum produced into a spine-like process.
    Antennæ never more than 13-jointed..29
    Antennæ 18-jointed...**Saccharissa** Kirby.

23. Antennæ 10–13-jointed.. 24
Antennæ 22-jointed..**Eucharissa** Westwood.

24. Antennæ simple, without branches.. 25
Antennæ ramose or with branches.. 28

25. Flagellar joints moniliform.. 26
Flagellar joints cylindrical, not moniliform.. 27

26. Abdomen compressed, ascending..**Eucharis** Latreille.
Abdomen neither compressed nor ascending.
    First joint of tarsi much thickened.....................................**Tricoryna** Kirby.
    First joint of tarsi very long, slender..................................**Metagea** Kirby.

27. Antennæ 10–11-jointed.
    Petiole of abdomen abruptly enlarged at apex; thorax smooth......**Pseudometagea** Ashmead.
    Petiole of abdomen normal, long, cylindrical; thorax rugose..........**Psilogaster** Blanchard.
Antennæ 13-jointed, rather short; thorax closely punctate, the parapsidal furrows distinct; right mandible with two teeth within, the left with one tooth within...................**Orasema** Cameron.

28. Scutellum spined, bidentate or produced into long processes that extend over the abdomen....... 29
Scutellum normal, unarmed.
    Antennæ with 4 branches; wings hyaline.........................**Pseudochalcura** Ashmead.
    Antennæ with more than four branches; wings with a substigmal cloud or fascia.
    Chalcura Kirby.

29. Scutellum not conically produced into a spine.. 30
Scutellum conically produced into a spine..................................**Destefania** Dalla Torre.

30. Scutellum with the processes very long, usually as long as the abdomen and sometimes very broad, forming a shield over the abdomen.. 32
Scutellum bidentate, the teeth never very long.
    Metathorax armed with strong lateral projections or teeth................................ 32
    Metathorax unarmed, without teeth.
        A hump-like elevation above the metapleura.........................**Stibula** Spinola.
        No hump-like elevation above the metapleura................**Schizaspidia** Westwood.

31. Metathoracic processes curving downwards; antennæ simple................**Lophyrocera** Cameron.
Metathoracic processes consisting of two horizontal teeth; antennæ with 9 branches.
Tetramelia Kirby.

32. Scutellar processes long and slender, generally curving inward toward tips.................... 36

Scutellar processes broad, contiguous their entire length or at least basally..................... 33

33. Scutellar process long, broad and contiguous, but very flat, the extremities rounded, subtruncate or furnished with two rounded, short spines.. 34

Scutellar processes not so shaped.

Scutellar process very broad, deeply, semicircularly emarginate at apex; antennæ with 9 branches.. **Thoracantha** Latreille.

Scutellar processes long, triangularly pointed and longitudinally striate; antennæ with 8 branches.. **Uromelia** Kirby.

34. Thorax pubescent.. 35

Thorax *not* pubescent.

Mesonotum and scutellum medially impressed; antennæ 10-jointed.... **Dicœlothorax** Ashmead.

Mesonotum and scutellum not impressed, the scutellar processes at base as wide as the thorax, briefly compressed in the center, then dilated and at apex furnished with two rounded, short spines.. **Lætocantha** Shipp.

35. Scutellar processes at apex rounded and not sharply cleft, the notch extending two thirds the entire length.. **Dilocantha** Shipp.

36. Head and eyes normal, not tuberculate.. 37

Head and eyes tuberculate.. **Isomeralia** Shipp.

37. Antennæ 11-jointed, the third joint not much longer than the fourth.......................... 38

Antennæ 10-jointed, the third joint very long, as long as the other joints united... **Lirata** Cameron.

38. Thorax not pubescent, the scutellum longitudinally striate........................ **Kapala** Cameron.

Thorax clothed with a fine pubescence, the scutellum smooth, not striate, the apices of the scutellar processes serrate.. **Lasiokapala** Ashmead.

Family LXVI. MISCOGASTERIDÆ.

1833. Miscogasteridæ, Family 4 (partim), Walker, Ent. Mag., I, p. 370.

1856. Miscogasteroidæ, Familie 14 (partim), Förster, Hym. Stud., II, pp. 19, 24 and 51.

1875. Pteromalina, Tribus (partim), Thomson, Hym. Skand., IV., pp. 12 and 216.

1886. Pteromalinæ, subfamily (partim), Howard, Ent. Amer., I, p. 198.

1897. Miscogasteridæ, Family LXVI., Ashmead, Proc. Ent. Soc. Washington, IV., pp. 235 and 245.

1900. Miscogasteridæ, Family LXVI., Ashmead, Proc. U. S. National Museum, XXIII., p. 202.

This family very closely resembles the family *Pteromalidæ*, and the two are separated with difficulty, the only reliable character to separate them being the number of apical spurs on the hind tibiæ. In this family the hind tibiæ have *two* apical spurs, while in the *Pteromalidæ* there is but *one* apical spur. It is a good character but not easily seen in the smaller species, and the greatest care and caution must be exercised in examining specimens before they can be placed in their proper families. A very strong lens is required to see the spurs and sometimes it will be found necessary to use the compound microscope before the number of spurs, in these minute chalcidids, can be definitely settled.

Four distinct subfamilies, distinguished by the characters made use of in the following table, have been recognized:

TABLE OF SUBFAMILIES.

1. Metathorax at apex produced beyond the insertion of the hind coxæ; the abdomen petiolate or subpetiolate 4
Metathorax normal, not produced at apex 2
2. Abdomen distinctly petiolate; if subsessile it is elongate and strongly carinate beneath 3
Abdomen sessile or subsessile.
Antennæ 8–11-jointed, inserted just above the clypeus or close to the mouth border. Subfamily I. PIRENINÆ.
Antennæ 12–13-jointed, and most frequently inserted far above the clypeus, very rarely inserted just above the clypeus .... Subfamily II. TRIDYMINÆ.
3. Antennæ 12–13-jointed; marginal vein always shorter than the subcostal, the costal cell normal; second abdominal segment often large but not especially lengthened; ovipositor not exserted; mesothoracic furrows most frequently complete .... Subfamily III. MISCOGASTERINÆ.
4. Antennæ 13–14-jointed, subclavate, inserted below the middle of the face; front wings with the marginal vein very long, usually fully as long as the subcostal vein; second abdominal segment much lengthened; ovipositor usually exserted; mesothoracic furrows incomplete; ♂ antennæ often verticellate-pilose .... Subfamily IV. LELAPINÆ.

SUBFAMILY I. PIRENINÆ.

1843. Pireniani, Tribus (partim), Haliday, Trans. Ent. Soc. London, III., p. 295.
1856. Pyrenoidæ, Familie (partim), Förster, Hym. Stud., II., pp. 18, 22 and 40.
1875. Pirenina, Tribus, Thomson, Hym. Skand., IV., pp. 12 and 187.
1886. Pireninæ, Subfamily (partim), Howard, Ent. Amer., I., p. 198.
1899. Pireninæ, Subfamily I., Ashmead, Proc. Ent. Soc. Washington, IV., p. 247.

This group is of small extent, although widely distributed. It is separated from the other subfamilies principally by the paucity of joints in the antennæ, and most of the species falling in it, whose parasitism is known, attack dipterous larvæ.

The genera *Calypso* and *Macroglenes* are easily separated by the different shaped heads in the males. Neither Haliday nor Thomson, however, give the characters to separate the females, and since I am only acquainted with *Macroglenes*, it has been impossible to give characters to separate the females.

TABLE OF GENERA.

1. Females 2
Males 9
2. Eyes pubescent 3
Eyes bare 5

3. Abdomen with the second segment occupying about one half the whole surface or only a little more.
   Antennæ 11-jointed, the scape long, slender, the pedicel at least as long as the club; marginal vein not more than *four* times the length of the stigmal vein.......... **Erotolepsia** Howard (type *E. compacta* Howard).
   Antennæ 10-jointed, the scape short and slender, the pedicel shorter than the club; marginal vein long, about *six* times the length of the stigmal vein................ **Herbertia** Howard (type *H. lucens* Howard).

5. Antennæ 10-jointed, with one or two ring-joints.
   Maxillary palpi 2-jointed.................... 8
   Maxillary palpi 4-jointed.................... 6

6. Ovipositor exserted.................... 7
   Ovipositor *not* exserted.
   Postmarginal and stigmal veins very short.
   ?.................... **Calypso** Haliday (type *C. serratulæ* Haliday).
   ?.................... **Macroglenes** Westwood (type *Ichneumon penetrans* Kirby).

7. Antennæ with *two* ring-joints; postmarginal and stigmal veins very short........... **Pirene** Haliday (type *P. varicornis* Hal.).
   Antennæ with *one* ring-joint; postmarginal and stigmal veins long................. **Ecrizotes** Förster (type *E. monticola* Förster).

8. Legs abnormal, the tibiæ strongly inflated or swollen, stouter than the femora, the tarsi short and slender, the joints very short; clypeus triangularly produced...... **Spathopus** Ashmead, gen. nov. (type *S. anomalipes* Ashm.).

9. Eyes pubescent.................... 10
   Eyes bare.................... 11

10. Antennæ 11-jointed; marginal vein not more than *four* times the length of the stigmal, the latter with a distinct club.................... **Erotolepsia** Howard.
    Antennæ 10-jointed; marginal vein about *six* times the length of the stigmal vein. **Herbertia** Howard.

11. Antennæ 10-jointed, with one or two ring-joints.
    Maxillary palpi *two*-jointed.................... 13
    Maxillary palpi *four*-jointed.................... 12

12. Eyes normal, not converging above.................... **Calypso** Haliday.
    Eyes abnormal, converging and nearly meeting above on the vertex......... **Macroglenes** Westwood.

13. Marginal vein *not* twice as long as the stigmal vein; flagellum not clavate.......... **Pirene** Haliday.
    Marginal vein about twice as long as the stigmal vein, thickened at the base; flagellum short, clavate, the joints of the funicle moniliform, pilose.................... **Ecrizotes** Förster.

SUBFAMILY II. TRIDYMINÆ.

1835. Ormoceridæ, Family (partim), Walker, Ent. Mag., II., p. 167.
1856. Ormoceroidæ, Familie 15 (partim), Förster, Hym. Stud., II., pp. 19 and 24.
1856. Hormoceroidæ, Familie 15 (partim), Förster, *opus cit.*, p. 59.
1875. Tridyminæ Tribus, (partim) Thomson, Hym. Skand. pp. 12 and 192.
1886. Tridyminæ, Subfamily, (partim) Howard, Ent. Amer., I., p. 198.
1899. Tridyminæ, Subfamily II., Ashmead, Proc. Ent. Soc. Washington, IV., p. 247.

This subfamily seems to be a natural group of gall-inhabiting species, allied to the *Pireninæ*, but easily separated by the structure of the antennæ.

Two tribes may be distinguished:

TABLE OF TRIBES.

Mesonotum with *complete*, distinct furrows..Tribe I. Tridymini.
Mesonotum with *incomplete* furrows, indicated only anteriorly....................Tribe II. Metastenini

TRIBE I. *Tridymini.*

The complete mesonotal furrows distinguish this tribe. Most of the species falling in this tribe are parasitic upon gall-making or gall-inhabiting Diptera, belonging to the family *Cecidomyiidæ*. *Æpocerus* Mayr, however, is a genus living parasitically upon fig-insects in Brazil, and one or two exotic genera attack other gall-inhabiting insects.

TABLE OF GENERA.

1. Females.. 2
   Males.. 15
2. Antennæ inserted near the mouth or just above the clypeus.................................. 3
   Antennæ inserted on or near the middle of the face, far above the clypeus.................. 8
3. Marginal vein normal... 4
   Marginal vein abnormal, semicircularly thickened at the base.....**Stigmatocrepis** Ashmead g. nov. (type *S. americana* Ashm.).
4. Clypeus at apex truncate or with a slight median sinus, never produced......................... 5
   Clypeus at apex triangularly produced.
      Antennæ 12-jointed, the flagellum clavate, the joints of the funicle quadrate or transverse; abdomen ovate or conic ovate...............**Tridymus** Ratzeburg (type *T. aphidum* Ratz.).
5. Head and thorax *not* umbilicately punctate, at the most finely punctate, shagreened or rugulose, sometimes smooth.. 6
   Head and thorax umbilicately punctate.
      Front wings hyaline, sometimes with a smoky discoidal cloud, the marginal vein much longer than the stigmal, the latter with an upward curve, the first marginal vein not longer than the stigmal; antennæ 13-jointed with 2 ring-joints, the pedicel not long.
      Decatomothorax Ashmead g. nov. (type *D. gallicola* Ashm.).
6. Head and thorax finely punctate or shagreened, rarely smooth....................................... 7
   Head and thorax finely rugulose; marginal vein not longer than the stigmal vein, the latter straight, but oblique, not curved, postmarginal vein longer than the stigmal; antennæ 13-jointed, with 2 ring-joints, the pedicel large, as long as or a little longer than the ring-joints and the first joint of the funicle united..................**Alloderma** Ashmead g. nov. (type *A. maculipennis* Ashm.).
7. Abdomen conically produced, the ovipositor exserted; antennæ 12-jointed, the funicle joints transverse; marginal vein more than twice the length of the stigmal vein.....**Gastrancistrus** Westwood. (type *G. vagans* Westw.).
   Abdomen short oval, above depressed, beneath boat-shaped; antennæ 13-jointed, the funicle 6-jointed, the joints short, nearly cup-shaped..**Oxyglypta** Förster.

8. Front wings normal.. 9

Front wings with the portion comprising the costal cell dilated and obliquely truncate at the juncture of the submarginal vein with the marginal.

Antennæ 13-jointed, the flagellum dilated, the joints of funicle transverse, subpedunculate.

Epicopterus Westwood (type *E. choreiformis* Westw.).

9. Antennæ 13-jointed, with 2 or 3 ring joints.. 13

Antennæ 11- or 12-jointed... 10

10. Thorax at most sparsely punctate, or almost smooth.. 11

Thorax slightly rugulosely punctate; antennæ 12-jointed; marginal vein about twice as long as the stigmal.................................... **Syntasis** Walker (type *S. encyrtoides* Walk.).

11. Wings *with* marginal ciliæ... 12

Wings *without* marginal ciliæ.

Antennæ 12-jointed, with *one* ring-joint.. b

Antennæ 11- or 12-jointed, with *two* ring-joints.

Antennæ 11-jointed; abdomen as long as the head and thorax united, compressed.

Syntomocera Förster (type *S. clavicornis* Först.).

Antennæ 12-jointed; abdomen elongated, usually compressed and carinate beneath.

Asematus Förster (type *A. amphibolus* Först.).

b. Abdomen oblong, fully as long as the head and thorax united; head short, subconvex in front; mesonotum not short, the furrows deep. **Cecidoxenus** Ashm. g. nov. (type *C. nigrocyaneus* Ashm.).

12. Antennæ 13-jointed, subclavate, the joints of the funicle, except the first, quadrate or nearly; metathorax short with a median carina, the spiracles small, oval; head with sparse, thimble-like punctures; abdomen conic-ovate................ **Semiotellus** Westwood (type *Semiotus mundus* Walk.).

13. Antennæ with *two* ring-joints... 14

Antennæ with *three* ring-joints.

Abdomen depressed, the ovipositor subexserted, never very long, at the most one third the length of the abdomen, usually shorter.......... **Æpocerus** Mayr (type *Æ. excavatus* Mayr).

14. Metathorax short, *with* a median carina; abdomen compressed, above depressed, beneath keeled.

Terobia Förster (type *T. dispila* Först.).

Metathorax very short, *without* a median carina; abdomen subglobose or short oval; flagellum subclavate, the pedicel large, the joints of the funicle small, submoniliform, increasing in size towards the club.............................. **Paraterobia** Ashmead g. nov. (type *P. nigriceps* Ashm.).

15. Antennæ inserted near the mouth or just above the clypeus................................ 16

Antennæ inserted on or near the middle of the face, far above the clypeus...................... 21

16. Marginal vein normal... 17

Marginal vein abnormal, semicircularly thickened at the base............. **Stigmatocrepis** Ashmead.

17. Clypeus at apex truncate or with a slight median sinus, never produced...................... 18

Clypeus at apex triangularly produced.

Antennæ 12-jointed, the flagellum filiform, pubescent or hairy, the funicle joints quadrate or transverse quadrate, losely joined .... **Tridymus** Ratzeburg.

18. Head and thorax not umbilicately punctate, at the most finely punctate, shagreened or rugulose, sometimes smooth.. 19

Head and thorax umbilicately punctate.

Antennæ 13-jointed with *two* ring-joints .... **Decatomothorax** Ashmead.

19. Head and thorax finely punctate or shagreened, rarely smooth.............................. 20

Head and thorax finely rugulose; marginal vein not longer than the stigmal, the latter straight but oblique, not curved, postmarginal vein longer than the stigmal; antennæ 13-jointed with *two* ring-joints........ **Alloderma** Ashmead.

20. Antennæ 12-jointed........ **Gastrancistrus** Westwood.

Antennæ 13-jointed........ **Oxyglypta** Förster.

21. Front wings normal........ 22

Front wings abnormal, the portion comprising the costal cell dilated and obliquely truncate at the juncture of the submarginal vein with the marginal; antennæ 13-jointed.... **Epicopterus** Westwood.

22. Antennæ 13-jointed, with *two* or *three* ring-joints........ 26

Antennæ 11- or 12-jointed........ 23

23. Thorax at most sparsely punctate or nearly smooth........ 24

Thorax slightly rugulosely punctate; antennæ 12-jointed........ **Syntasis** Walker.

24. Wings *with* marginal ciliæ........ 25

Wings *without* marginal ciliæ.

  Antennæ 12-jointed with *one* ring-joint........ **Cecedoxenus** Ashmead.

  Antennæ 11- or 12-jointed with *two* ring-joints.

    Antennæ 11-jointed, with *two* ring-joints........ **Syntomocera** Förster.

    Antennæ 12-jointed, with *two* ring-joints........ **Asematus** Förster.

25. Antennæ 13-jointed........ **Semiotellus** Westwood.

26. Antennæ with *two* ring-joints........ 27

Antennæ with *three* ring-joints........ **Æpocerus** Mayr.

27. Metathorax short, with a median carina........ **Terobia** Förster.

TRIBE II. *Metastenini*.

The species falling in this tribe are easily separated from those in the tribe *Tridymini* by mesonotal characters, the parapsidal furrows being incomplete.

TABLE OF GENERA.

1. Females........ 2

Males........ 11

2. Antennæ 12-jointed, with *two* ring-joints........ 3

Antennæ 13-jointed, with *two* ring-joints........ 4

3. Flagellum incrassated; mandibles 3-dentate, the malar space not large; metanotum short, smooth, with a distinct median carina, the spiracles small; marginal vein longer than the stigmal vein, the postmarginal very long........ **Metastenus** Walker (type *M. concinus* Walk.).

Flagellum at the most subclavate, the club 3-jointed; mandibles (?) 4-dentate, the malar space large; axillæ widely separated; metanotum punctate, with a median carina; marginal vein thickened, as long as the stigmal vein, the postmarginal longer........ **Disema** Förster (type *D. pallipes* Förster).

4. Tip of antennæ normal, not ending in a spine........ 5

Tip of antennæ ending in a spine, as in *Rhaphiteles* Walk., the flagellum long and slender, the funicle joints all long; left mandible 3-, the right 4-dentate; metathorax not short, without a median carina, the spiracles large, oval; abdomen large, depressed, very much longer than the head and thorax united........ **Stylophorella** Ashmead, g. nov. (type *S. perplexa* Ashm.).

5. Pronotum not distinctly separated........ 6

Pronotum distinctly separated........ 8

6. Funicle filiform, the first joint large.
Marginal vein slender, always longer than the stigmal vein; abdomen ovate.............. 7
Marginal vein *thickened*, not longer than the stigmal vein.
Body short; clypeus bidentate; mandibles 3-dentate..............**Xenocrepis** Förster (type *Cænocrepis arenicota* Thoms.).

7. Abdomen with a yellow band at base; metathorax short, *with* a median carina and lateral folds; clypeus separated, anteriorly arcuate ....**Dimachus** Thomson (type *Pteromalus discolor* Walk.).
Abdomen *without* a yellow band at base; metathorax not short, *without* a median carina; clypeus separated, smooth, with a median tooth anteriorly. .**Hemitrichus** Thomson (type *H. rufipes* Thoms.).

8. Flagellum with the first joint short.. 9
Flagellum with the first joint long, cylindrical.. 10

9. Antennæ short, clavate in both sexes, inserted a little below the middle of the face; clypeus at apex truncate; metathorax rather short, *without* lateral folds, the spiracles rounded....**Habritus** Thomson (type *Pteromalus brevicornis* Ratzeburg).
Antennæ filiform, inserted on the middle of the face; clypeus at apex with a median incision; metathorax not long, *without* a median carina, spiracles large, nearly linear.........**Dinarmus** Thomson (type *D. acutus* Thoms.).

10. Antennæ filiform, inserted on the middle of the face, the funicle joints all longer than thick; clypeus anteriorly with a median sinus; metathorax not short, without lateral folds, median carina, or spiracular sulci, the spiracles oval.............**Arthrolysis** Förster (type *Pteromalus scabriculus* Nees).

11. Antennæ 12-jointed, with *two* ring-joints.. 12
Antennæ 13-jointed, with *two* ring-joints.. 13

12. Marginal vein not thickened, longer than the stigmal vein; metanotum short, smooth but with a distinct median carina, the spiracles small..................................**Metastenus** Walker.
Marginal vein thickened, *not* longer than the stigmal vein; metanotum punctate, with a median carina..**Disema** Förster.

13. Pronotum not distinctly separated.. 14
Pronotum distinctly separated.. 16

14. Marginal vein slender, always longer than the stigmal vein.. 15
Marginal vein *thickened*, not longer than the stigmal vein.
Clypeus bidentate; mandibles 3-dentate..................................**Xenocrepis** Förster.

15. Metathorax short, *with* a median carina..................................**Dimachus** Thomson.
Metathorax *not* short, *without* a median carina..................................**Hemitrichus** Thomson.

16. Antennæ inserted on the middle of the face, long.. 17
Antennæ inserted somewhat below the middle of the face.....................**Habritus** Thomson.

17. Metathorax without a median carina, the lateral folds *present*, the spiracles large, nearly linear. **Dinarmus** Thomson.
Metathorax without a median carina, the lateral folds *absent*, the spiracles oval. **Arthrolysis** Förster.

Subfamily III. MISCOGASTERINÆ.

1833. Miscogasteridæ, Family IV (partim), Walker, Ent. Mag., I., p. 370.
1835. Ormoceridæ, Family (partim), Walker, Ent. Mag., I., p. 167.
1835. Pteromalidæ, Family (partim), Walker, Ent. Mag., II., p. 286.

1856. Miscogasteroidæ, Family XIV (partim), Förster, Hym. Stud., II., pp. 19, 24 and 59.

1875. Pteromalina, Tribus (partim), Thomson, Hym. Skand., IV., pp. 12 and 216.

1885. Pteromalinæ, Subfamily (partim), Howard, Ent. Amer., I., p. 198; II., 1886, p. 33.

1885. Mischogastrides, Subtribus Thomson, Hym. Skand., IV., pp. 16 and 219.

1886. Mischogastrides, Tribe, Howard, Ent. Amer., II., p. 33.

This subfamily, although distinct, has affinities which ally it with the families *Perilampidæ* and the *Eucharidæ*, and also with the *Pteromalidæ*, through the subfamily *Sphegigasterinæ*. From the last mentioned it is separated by the *two*-spurred hind tibiæ, from the others by the cephalic, thoracic and abdominal differences brought out in my tables.

Two tribes may be recognized:

TABLE OF TRIBES.

Mesonotum with the parapsidal furrows *incomplete*, indicated only anteriorly; clypeus transverse, sublunate, the anterior margin narrowly incised medially .... Tribe I. **Halticopterini.**

Mesonotum with the parapsidal furrows *complete;* clypeus not transverse..... Tribe II. **Miscogasterini.**

TRIBE I. *Halticopterini.*

The incomplete mesonotal furrows are sufficient to distinguish the tribe. The group is apparently parasitic upon Diptera belonging to the family *Anthomyiidæ*, and some are recorded from Lepidoptera and Hymenoptera. These latter records, however, are questionable and, additional evidence is needed before the true parasitism of these insects is definitely settled.

Many insects are found associated with the wood-boring Coleoptera, gall-making Diptera, Hymenoptera, Lepidoptera, etc., and it is not easy to tell correctly the host from which you breed several parasites.

TABLE OF GENERA.

1. Females 2

Males 3

2. Clypeus transverse, sublunate, the anterior margin narrowly incised medially.

Marginal vein longer than the stigmal, the latter ending in a small knob; mandibles strong, 4-dentate .... **Halticoptera** Spinola (type *Diplolepis flavicornis* Spin.).

Marginal vein usually not longer than the stigmal, the latter with a small knob; mandibles not strong, but 4-dentate, the upper tooth bent, the lower straight .... **Dicylus** Walker (type *D. lynastes* Walk.).

3. Palpi abnormal; marginal vein longer than the stigmal .... **Halticoptera** Spinola.

Palpi normal; marginal vein usually shorter than the stigmal or no longer .... **Dicylus** Walker ? = *Tityros* Walk. ♂.

TRIBE II. *Miscogasterini.*

This tribe may be recognized by the *complete* mesonotal furrows; otherwise it is practically identical with the previous tribe, with similar habits.

TABLE OF GENERA.

1. Females.......... 2

Males.......... 9

2. Pronotum not distinctly separated.......... 3

Pronotum distinctly separated.

  Mesothoracic lobes not convex; abdomen elongate, subcompressed, the petiole short. **Toxeuma** Walker (type *T. ericæ* Walk.).

3. Mesothoracic lobes flat or at most subconvex, the furrows not deep, delicately impressed posteriorly. 4

Mesothoracic lobes convex, the furrows deep.......... 5

4. Metathorax long, rugose, with a median carina and complete lateral folds; scutellum with a more or less distinct cross-furrow before apex, the lateral margins convergent toward base. **Megorismus** Walker (type *M. aon* Walk.).

Metathorax short, almost smooth, with a distinct median carina; scutellum with the lateral margins nearly straight, not or only slightly convergent toward base.......... **Ormocerus** Walker (type *O. latus* Walk.).

5. Petiole long; both mandibles 4-dentate.......... 8

Petiole short or moderate; mandibles variable.

  Left mandible 3-dentate, the right 4-dentate.......... 6

  Both mandibles alike, either 3- or 4-dentate.......... 7

6. Petiole rugose or smooth; front wings with the stigmal vein ending in a *small* knob. **Lamprotatus** Westwood (type *L. splendens* Westw.).

Petiole punctate, subdepressed; front wings with the stigmal vein ending in a *large* knob.

  Dorsum sericeo-punctate.......... **Gitognathus** Thomson (type *Sphæropalpus viridis* Först.).

  Dorsum squamo-punctate.......... **Stictomischus** Thomson (type *S. scaposus* Thoms.).

7. Both mandibles 3-dentate; stigmal knob *small;* clypeus transverse, separated, the anterior margin truncate.......... **Seladerma** Walker (type *S. lætum* Walk.).

Both mandibles 4-dentate; stigmal knob *large*.......... **Miscogaster** Walker (type *M. hortensis* Walk.).

8. Stigmal vein ending in a large knob.......... **Miscogaster** Walker.

9. Pronotum not distinctly separated.......... 10

Pronotum distinctly separated.

  Both mandibles 4-dentate; flagellum hairy, the first joint not longer than wide; mesothoracic lobes not convex.......... **Toxeuma** Walker.

10. Mesothoracic lobes convex, the furrows deep.......... 11

Mesothoracic lobes flat or at most subconvex, the furrows not deep, delicately impressed posteriorly.

  Metathorax long, rugose, with a median carina and complete lateral folds; scutellum with a cross-furrow before apex, the lateral margins convergent toward base.... **Megorismus** Walker.

  Metathorax short, almost smooth, with a distinct median carina; scutellum with the lateral margins nearly straight.......... **Ormocerus** Walker.

11. Petiole long or short; both mandibles 4-dentate.......... 14

Petiole short; both mandibles 3-dentate, or the left is 3-dentate, the right 4-dentate.

  Left mandible 3-, the right 4-dentate.......... 12

  Both mandibles 3-dentate.......... 13

12. Stigmal vein ending in a *small* knob; palpi normal .... **Lamprotatus** Westwood.
Stigmal vein ending in a *large* knob.
Palpi abnormal .... **Gitognathus** Thomson.
Palpi normal .... **Stictomischus** Thomson.
13. Stigmal vein ending in a small knob; palpi normal .... **Seladerma** Walker.
14. Stigmal vein ending in a large knob .... **Miscogaster** Walker.

SUBFAMILY IV. LELAPINÆ.

1899. Lelapinæ, Subfamily IV., Ashmead, Proc. Ent. Soc. Washington, IV., p. 247.
1901. Lelapinæ, Subfamily IV., Ashmead, Faun. Hawaiiensis, I., p. 311.

This group reaches its greatest development in South America, where the species of *Lelaps* are numerous, although as yet only a few have been described.

The group is, I think, correctly placed in the family *Miscogasteridæ*. It shows some affinities with the *Cleonymidæ*, and with the *Pteromalidæ*, through the subfamily *Diparinæ*. The two spurred hind tibiæ, however, separate it from the latter, while other characters separate it from the *Cleonymidæ*.

The metathorax at apex is most frequently contracted into a neck, the usually conically produced abdomen being attached to this neck by a short petiole. The mesonotal furrows are complete; the axillæ are usually approximate, although separated at base of the scutellum, while the head, especially in the genus *Lelaps*, resembles somewhat that found among the *Cleonymidæ*, the eyes being large and the occiput flat.

My recently characterized genus *Apterolelaps* is from North American, and superficially resembles *Philachyra* Haliday, a genus in the *Eurytomidæ*.

TABLE OF GENERA.

1. Females 2
Males 6
2. Antennæ 14-jointed with 2 ring-joints 3
Antennæ 12- or 13-jointed 5
3. Winged 4
Apterous.
Abdomen conically pointed, the petiole distinct, a little longer than thick, the second segment occupying hardly half its surface; flagellum rather stout, subclavate, the joints fluted.
Apterolelaps Ashmead (type *A. nigriceps* Ashm.).
4. Abdomen conically produced at apex, and usually ending in a prominent ovipositor; second segment large, occupying fully half the surface, the third to fifth very short, the sixth and seventh together conical, longer than half the length of the second. **Lelaps** Haliday (type *Merostenus sodales* Walk.).
5. Abdomen conically produced at apex, the second segment not much longer than the third and fourth united, the fifth longer than the fourth, the seventh conically produced; scutellum with a cross-furrow at its apical third .... **Neolelaps** Ashmead (type *N. hawaiiensis* Ashm.).

Abdomen subglobose or short oval, the second segment very large, occupying nearly the whole surface, the following very short, more or less retracted within the second; scutellum with a cross-furrow very near its apex .... **Mesolelaps** Ashmead (type *M. cyaneiventris* Ashm.).

6. Petiole of abdomen long, the body small, spatulate; antennæ very long, 14-jointed, longer than the whole body, the joints long, cylindrical, clothed with long, sparse hairs. .... **Lelaps** Haliday.

Petiole of abdomen very short, the body oblong-oval, truncate at apex; antennæ not longer than the thorax, 13-jointed, the flagellum filiform, pubescent, the joints after the first about twice as long as thick .... **Mesolelaps** Ashmead.

FAMILY LXVII. CLEONYMIDÆ.

1837. Cleonymidæ, Family (partim), Walker, Ent. Mag., IV., p. 349.

1846. Eupelmidæ, Family 9 (partim), Walker, List Chalcid. Brit. Museum, I., p. 52.

1856. Cleonymoidæ, Familie XIV. (partim), Förster, Hym. Stud., II., pp. 19, 24 and 46.

1875. Cleonymides, Subtribus, Thomson, Hym. Skand., IV., p. 217.

1878. Cleonymides, Subtribus, Thomson, Hym. Skand., V., p. 3.

1886. Cleonymides, Tribe, Howard, Entom. Amer., II., pp. 33, 34.

1899. Cleonymidæ, Family LXVI., Ashmead, Proc. Ent. Soc. Washington, IV., p. 200.

An historical sketch of this family was given in my paper entitled: "On the Genera of the Cleonymidæ," published in 1899.

Unquestionably, the family comes nearest to the family *Encyrtidæ*, and forms a connecting link between it and some families previously treated, *i. e.*, the *Chalcididæ*, *Eurytomidæ* and the *Miscogasteridæ;* some genera in the subfamily *Chalcedectinæ* especially being remarkably like some genuine *Chalcididæ*. Many males, too, are easily mistaken for genuine *Eupelmines* and *Encyrtines*. *Pelecinella* has some characters similar to the *Eurytomidæ*, and the *Torymidæ*.

Coleotrechnus, placed in this family, is unknown to me. It is placed here from the description alone, and may be a genuine Encyrtid, although nothing is said of a saltatorial middle tibial spur.

TABLE OF SUBFAMILIES.

1. Mesonotal furrows not at all indicated 4

Mesonotal furrows more or less distinct 2

2. Abdomen longly petiolated 3

Abdomen sessile, or subpetiolate, never longly petiolate.

Posterior femora much swollen and usually toothed or finely denticulate beneath, as in *Chalcis*, *Smicra*, etc.; abdomen usually depressed, the ovipositor rarely exserted; antennæ at the most 11. jointed .... Subfamily I. CHALCEDECTINÆ.

Posterior femora not much swollen and very rarely toothed beneath, the anterior femora usually more or less enlarged, sometimes very much swollen and often exeised or dentate beneath toward apex; ovipositor often, but not always, exserted; antennæ 11–13-jointed.

Subfamily II. CLEONYMINÆ.

3. Body of abdomen strongly compressed, sword-shaped, ending in a long ovipositor, the basal sheaths very broad; all legs slender, the hind pair very long, their coxæ long, cylindrical; front wings with the marginal and postmarginal veins very long, the latter extending to tip of wing, the stigmal vein very small, subsessile; antennæ 11-jointed, inserted close to the mouth. .Subfamily III. PELECINELLINÆ.

4. Abdomen subsessile, compressed, conically produced toward apex; front wings with the postmarginal and stigmal veins very short, the knob of the latter nearly sessile, rounded; posterior tibiæ compressed, the hind margin denticulate................................Subfamily IV. COLOTRECHNINÆ.

SUBFAMILY I. CHALCEDECTINÆ.

1889. Polychromminæ, Subfamily, Ashmead, Proc. Ent. Soc. Washington, I., p. 226.
1895. Chalcedectinæ, Subfamily, Ashmead, Proc. Ent. Soc. Washington, III., p. 230.
1898. Chalcodectinæ, Subfamily, Dalla Torre, Cat. Hym., V., p. 186.
1899. Chalcedectinæ, Subfamily I., Ashmead, Proc. Ent. Soc. Washington, IV., p. 201.

The sessile abdomen and the greatly swollen and usually dentate or serrate hind femora, as in the *Chalcididæ*, distinguish the family. It is not represented in Europe and has reached its greatest development in South America and Australia, where the species are evidently numerous. I have also seen an undescribed species from Africa, where it should be well represented.

TABLE OF GENERA.

1. Females.. 2
Males.. 7

2. Hind femora much swollen, minutely denticulate beneath.. 5
Hind femora much swollen and armed beneath with large, distinct teeth, or at least with *one* large tooth.
Hind femora armed with 1 to 3 large teeth.. 3
Hind femora armed with several teeth.
Abdomen depressed, the fourth dorsal segment the largest, transversely striate or aciculate-
Chalcedectes Walker (type *C. maculicornis* Walker).

3. Hind femora with *one* large tooth, with three or four smaller teeth beyond....................... 4
Hind femora with *three* large teeth..................**Cleptimorpha** Walker (type *C. binotata* Walker)

4. Abdomen oblong-oval, subcompressed beneath, nearly bare, and ending in a long ovipositor; head and thorax coarsely reticulately punctate; flagellum long, slender, filiform......**Chalcidiscelis** Ashmead (type *C. koebelei* Ashm.).
Abdomen shorter than the thorax, compressed, the ovipositor hidden; mesonotum nearly smooth, or transversely striate or wrinkled; antennæ 12-jointed, the funicle 6-jointed, the joints transverse.
Systolomorpha Ashmead (type *S. thyridopterygis* Ashm.).

5. Antennæ 11-jointed.. 6
Antennæ 10-jointed................................**Amotura** Cameron (type *A. annulicornis* Cam.).

6. Abdomen ovate or conic-ovate.
Abdomen not depressed, convex beneath, the fourth dorsal segment longer than the third, the latter a little longer than the fifth; metathoracic spiracles reniform. **Agamerion** Haliday[1] (type *Miscogaster gelo* Walk.).
Abdomen depressed, flat above and beneath, the third and fourth dorsal segments short, united shorter than the fifth; stigmal vein rather short; metathoracic spiracles oval.
Euchrysia Westwood (type *E. cleptidea* Westw.).

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[1] Kirby has incorrectly classified this genus with the *Chalcidinæ*.

7. Hind femora much swollen, minutely denticulate beneath.......... 10
Hind femora much swollen and armed beneath with large, distinct teeth or at least with one large tooth.
  Hind femora armed with 1 to 3 large teeth.......... 8
  Hind femora armed with several teeth.......... **Chalcedectes** Walker.
8. Hind femora with *one* large tooth.......... 9
Hind femora with *three* large teeth.......... **Cleptimorpha** Walker.
9. Head and thorax coarsely, reticulately punctate.......... **Chalcidiscelis** Ashmead.
Head and thorax not coarsely reticulately punctate, the mesonotum almost smooth.
Systolomorpha Ashmead.
10. Antennæ 11-jointed.......... 11
Antennæ 10-jointed.......... **Amotura** Cameron.
11. Metathoracic spiracles reniform.......... **Agamerion** Haliday.
Metathoracic spiracles oval.......... **Euchrysia** Westwood.

SUBFAMILY II. CLENNYMINÆ.

1897. Cleonyminæ, Subfamily II, Ashmead, Proc. Ent. Soc. Washington, iv, pp. 201, 202.

To this group belong the better known genera of the family, namely *Cleonymus*, *Cheiropachys*, *Trigonoderus*, *Acrocormus*, etc., genera of world-wide distribution. It is the largest group of the family and includes many genera and species. Most of the species appear to attack only coleopterous larvæ and are of great economic importance, since they destroy beetles destructive to our fruit, shade and forest trees.

TABLE OF GENERA.

1. Females.......... 2
Males.......... 23
2. Anterior femora more or less distinctly swollen, and never excised dentate beneath.......... 18
Anterior femora much swollen, or excised dentate beneath.......... 3
3. Pronotum not much narrowed and always wider than long.......... 4
Pronotum much lengthened and narrowed, longer than wide.
  Front femora greatly swollen, but not excised dentate beneath; abdomen conically produced, but not much longer than the head and thorax united.
  Heydenia Förster (type *H. pretiosa* Förster).
  Front femora much swollen, and excised dentate beneath; abdomen elongate, conically produced.
  Lycisca Spinola (type *L. raptoria* Spinola).
4. Eyes bare.......... 1
Eyes pubescent.
  Ovipositor very long.......... 6
  Ovipositor not prominent, at the most subexserted.
    Abdomen subrotund, oblong or conic-ovate, the sides rounded, not carinated.......... 5
    Abdomen conic-ovate, or conically lengthened, the sides distinctly carinated.
    Epistenia Westwood (type *E. cœrulea* Westw.).

5. Labrum inconspicuous or hidden 7
Labrum conspicuous.
Abdomen conic-ovate . . . . **Cleonymus** Latreille (type *Ichneumon depressus* Fabr.).
Abdomen subrotund; antennæ 12-jointed, with *three* ring-joints . . . . **Micradelus** Walker (type *M. rotundus* Walk.).

6. Abdomen with the first and fifth segments the longest; antennæ 11-jointed . . . . **Belonea** Westwood (type *B. australica* Westw.).
Abdomen with the first segment longer than the three following, the third produced into a sharp triangular point at the middle; antennæ 9-jointed . . . . . **Cameronella** Dalla Torre, = *Panthalis* Cameron (type *P. blackburnii* Cam.).

7. Abdomen oblong or long-ovate; mesonotum with the furrows only slightly indicated anteriorly; fifth abdominal segment nearly as long as the first four segments united, the second and the third together hardly longer than the fourth, the first and fourth subequal; front wings maculate.
Ptinobius Ashmead (type *Charitopus magnificus* Ashm.).

8. Winged 9
Apterous.
Abdomen ovate, ending in a long ovipositor; antennæ 13-jointed, with *three* ring-joints.
Cea Haliday (type *C. pulicaria* Haliday).

9. Abdomen conic-ovate, or conical, the terminal segment tubular, the ovipositor very long 10
Abdomen as seen from above rotund, compressed or carinate beneath.
Front wings hyaline, the stigmal vein hardly two thirds the length of the marginal, and a little shorter than the postmarginal; metathorax with lateral folds, the spiracles oval-elliptic.
Tomicobia Ashmead (type *T. tibialis* Ashm.).
Abdomen conic-ovate, the segments subequal, the ovipositor not exserted.
Front wings *with* two transverse bands or maculæ; pronotum transverse-quadrate, narrowed medially; pedicel not lengthened . . . . **Cheiropachys** Westwood (type *Sphex colon* Linné).
Front wings *without* bands or maculæ; pronotum transverse-quadrate, but not narrowed medially and well separated; pedicel much lengthened . . . . **Schizonotus** Ratzeburg (type *S. sieboldii* Ratzeb.).

10. Last two abdominal segments very long, tubular. **Thaumasura** Westwood (type *T. terebrator* Westw.).
Last five abdominal segments very slender, tubular. **Solenura** Westwood (type *S. telescopica* Westw.).

11. Mesothoracic furrows complete 16
Mesothoracic furrows incomplete, indicated only anteriorly.
Pronotum short, narrowed medially 12
Pronotum very long, conical 15

12. Marginal vein not thickened 13
Marginal vein thickened, shorter than the postmarginal. **Zapachia** Förster (type *Z. spiloptera* Först.).

13. Abdomen oval, hardly as long as the thorax, above depressed 14
Abdomen conical, longer than the thorax, the segments after the first, which is the longest, subequal.
Front wings *with* one transverse band, the stigmal club large . . . . **Acrocormus** Förster (type *A. semifasciatus* Thoms.).
Front wings *without* a band, the stigmal club small. **Caudonia** Walker (type *C. ogylla* Walk.).

14. Front wings with a large, broad fuscous band beneath, the marginal and stigmal veins having a triangular hyaline streak within from the marginal vein; stigmal vein long, subclavate, as long as the marginal; funicle joints 3 to 6 a little wider than long . . . . **Brachycaudonia** Ashmead g. nov. (type *B. californica* Ashm.).

15. Abdomen ovate, shorter than the thorax, the segments subequal; middle tarsi incrassate.
Notanisus Walker (type *N. versicolor* Walk.).

16. Abdomen sessile.. 17

Abdomen petiolate.. 22

17. Abdomen elongate, conically produced or acuminate at apex; postmarginal vein well developed. 18

Abdomen long, conic-ovate, ending in a prominent ovipositor, which is dilated into three broad, leaf-like expansions, like a propeller in a naphtha launch. **Dinoura** Ashmead (type *D. auriventris* Ashm.).

18. Scutellum *without* a transverse grooved line before tip; head triangular, narrowed anteriorly...... 21

Scutellum *with* a transverse grooved line before the tip; head with rounded, convex cheeks.

Pronotum transverse, not large 19

Pronotum large, almost quadrate............. **Merostenus** Walker (type *M. phedyma* Walk.).

19. Pronotum very short, visible from above as a fine transverse line.............................. 20

Pronotum transverse.......................... **Trigonoderus** Westwood (type *T. princeps* Westw.).

20. Antennæ 13-jointed; middle tibiæ normal; metanotum with a sharp median carina.
Anoglyphis Förster (type *A. nubilosa* Först.).

Antennæ 14-jointed; middle tibiæ much lengthened. **Macromesus** Walker (type *M. amphiretus* Walk.).

21. Middle tibiæ not dilated at apex.................. **Platygerrhus** Thomson (type *P. gracilis* Thoms.).

Middle tibiæ dilated at apex, their tarsi broad at base.............................. **Pegopus** Förster
(type *Prosopon montanus* Walk.).

22. Scutellum *without* a transverse grooved line before tip........................ **Photismus** Thomson
(type *P. nubilosus* Thoms.).

23. Front femora not, or less distinctly, swollen, and never excised dentate beneath................. 28

Front femora much swollen, and sometimes excised dentate beneath.

Pronotum not much narrowed and always wider than long.............................. 24

Pronotum much narrowed and lengthened.

Front femora much swollen but not excised dentate beneath; abdomen clavate, depressed.. **Heydenia** Förster.

Front femora swollen and excised dentate beneath.................. **Lycisca** Spinola.

24. Eyes bare.. 27

Eyes pubescent.

Abdomen not carinate along the sides.. 25

Abdomen carinate along the sides.................................. **Epistenia** Westwood.

25. Labrum inconspicuous or hidden.. 26

Labrum conspicuous.

Metathorax *with* a median carina, the spiracles large, oblong or oval; flagellum subclavate, densely hairy, the joints of the funicle wider than long.............. **Cleonymus** Latreille.

Metathorax *without* a median carina, the spiracles small, rounded; flagellum long, filiform, densely hairy, the joints of the funicle long........................ **Micradelus** Walker.

26. Front wings bifasciate or maculate; marginal vein slender, about twice as long as the stigmal; pronotum not short; metanotum with a median carina; head lenticular, much wider than the thorax.
Ptinobius Ashmead.

27. Front wings bifasciate; marginal vein not longer than the stigmal, the latter long, strongly clavate; pronotum short, transverse, slightly narrowed; metanotum with a short median carina, the spiracles elliptic; head transverse; pedicel shorter than the first joint of the funicle. **Cheiropachys** Westwood.

Front wings hyaline, not fasciate; marginal vein longer than the stigmal, the latter not especially long, ending in a small knob; pronotum large, quadrate, well-separated .... **Schizonotus** Ratzeberg.

28. Mesonotum with the furrows complete.. 30
Mesonotum with incomplete furrows, indicated only anteriorly.
Marginal vein not thickened.. 29
Marginal vein thickened, shorter than the postmarginal.................... **Zapachia** Förster.
29. Wings with a transverse band or fascia.
Stigmal club very large.. **Acrocormus** Förster.
Stigmal club small... **Brachycaudonia** Ashmead.
Wings hyaline, without a fascia.
Stigmal club small.. **Caudonia** Walker.
30. Abdomen petiolate.. 34
Abdomen sessile.
Scutellum *with* a transverse grooved line before apex................................ 31
Scutellum *without* a transverse grooved line before apex............................ 32
31. Pronotum very short, visible from above as a fine transverse line.................... 32
Pronotum not very short.
Pronotum quadrate... **Merostenus** Walker.
Pronotum transverse... **Trigonoderus** Westwood.
32. Metanotum not short, smooth and with a sharp median carina; antennæ 13-jointed.
Anoglyphis Förster.
Metanotum very short, closely punctate; antennæ 14-jointed.................. **Macromesus** Walker.
32. Postmarginal vein well developed.. 33
Postmarginal vein scarcely longer than the short stigmal vein with its knob; scutellum with two parallel dorsal grooved lines; metanotum with a median carina; antennæ.......... **Dinoura** Ashmead.
33. Middle tibiæ not dilated at apex.. **Platygerrhus** Thomson.
Middle tibiæ dilated at apex, the tarsi much thickened at base.................... **Pegopus** Förster.
34. Scutellum without a transverse grooved line before the tip..................... **Photismus** Thomson.

SUBFAMILY III. PELECINELLINÆ.

1897. Pelecinellinæ, Subfamily III., Ashmead, Proc. Ent. Soc. Washington, IV., p. 201.

This subfamily is at present represented by a single genus, *Pelecinella* Westwood. Three species have been described, all from Brazil, and these are the largest and in some respects the most striking looking Chalcid-flies known.

The affinities of the group were discussed in my paper, "On the Genus *Pelecinella* Westwood," published in 1897.

Form very elongate; pronotum very long, longer and narrower than the mesonotum, contracted in front; head with a deep frontal furrow; abdomen long, compressed, lanceolate, ending in a long ovipositor, and longly petiolate; hind legs long, the coxæ long and cylindrical, the tibiæ longer than the femora, very gradually widened toward apex and terminating in two spurs, the tarsi slender, as long as the femora, the first joint longer than joints 2-5 united; stigmal vein very short, the marginal vein long, the postmarginal longer than the marginal......................... **Pelécinella** Westwood (type *B. phantasma* Westw.).

SUBFAMILY IV. COLOTRECHNINÆ.

1875. Colotrechnides, Subtribus, Thomson, Hym. Skand., IV., p. 217.

1878. Colotrechnides, Subtribus, Thomson, Hym. Skand., V., p. 46.

1886. Colotrechnides, Tribe, Howard, Ent. Amer., II., pp. 33 and 34.

1897. Colotrechninæ, Subfamily IV, Ashmead, Proc. Ent. Soc. Washington, IV., p. 201.

This group is unknown to me in nature. It is based upon Thomson's genus *Colotrechnus*, occurring in Sweden, who called it a subtribe.

Thomson's description clearly indicates that it belongs to the family *Cleonymidæ*, although the absence of mesonotal furrows is strongly suggestive of the *Encyrtidæ*.

Wings with the stigmal and postmarginal veins very short, the knob of the former rounded, subsessile; frontal depression long; antennæ 12-jointed, inserted below the middle of the face, the funicle 5-jointed; hind tibiæ compressed, the hind margin denticulate. . **Colotrechnus** Thomson (type *C. subcœrulens* Thoms.).

FAMILY LXVIII. ENCYRTIDÆ.

1837. Encyrtidæ, Family (partim), Walker, Ent. Mag., IV., p. 439.

1840. Encyrtidæ, Subfamily 4, Westwood, Intro. Mod. Classif. Ins., II., p. 166; Synop., p. 66.

1846. Eupelmidæ, Family 9 (partim), Walker, List Chalc. Brit. Museum, I., p. 52.

1846. Encyrtidæ, Family (partim), Walker, List Chalc. Brit. Museum, I., p. 53.

1848. Pteromalidæ, Family V. (partim), Walker, List Chalc. Brit. Museum, II., p. 104.

1856. Eupelmoidæ, Familie IV. (partim), Förster, Hym. Stud., II., pp. 18, 21 and 30.

1856. Encyrtoidæ, Familie V. (partim), Förster, Hym. Stud., II., pp. 18, 21 and 32.

1875. Encyrtina, Subtribus (partim), Thomson, Hym. Skand., IV., pp. 12 and 112.

1885. Encyrtinæ, Subfamily (partim), Howard, Ent. Amer., I., pp. 198, 216.

1897. Encyrtidæ, Family LXVIII., Ashmead, Proc. Ent. Soc. Washington, IV., p. 236.

1900. Encyrtidæ, Family LXVIII., Ashmead, Proc. U. S. Nat. Museum, XXII., p. 202.

This family was very fully characterized and discussed in my paper entitled "On the Genera of the Subfamily Encyrtinæ," published in the Proceedings of the U. S. National Museum for 1900. It is unnecessary, therefore, to repeat the characterization of the group, since the classification here is practically identical, the only change being the establishment of a new tribe in the *Eupelminæ*, and some new genera in the various tribes.

TABLE OF SUBFAMILIES.

1. Mesonotum entire, convex or subconvex, the parapsidal furrows entirely absent 2

Mesonotum not entire, usually depressed or impressed, rarely convex, the parapsidal furrows distinct or at least more or less distinct, never entirely wanting; marginal vein usually long.
Subfamily I. EUPELMINÆ.

2. Marginal vein rarely very long, often punctiform, and always much shorter than the submarginal or subcostal vein; stigmal vein usually short, rarely long; scutellum never short or transversely linear; middle tibiæ without lateral spurs .... Subfamily II. ENCYRTINÆ.
   Marginal vein long, as long as the submarginal or subcostal vein; scutellum very short, transversely linear; middle tibiæ with lateral spurs, the apical spur lobed. ...... Subfamily III. SIGNIPHORINÆ.

SUBFAMILY I. EUPELMINÆ.

1846. Eupelmidæ, Family (partim), Walker, Ann. & Mag. Nat. Hist., XVII., p. 114.
1856. Eupelmoidæ, Familie 4, Förster, Hym. Stud., II., pp. 18, 21 and 30.
1875. Eupelmina, Tribus, Thomson, Hym. Skand., IV., pp. 11 and 102.
1886. Eupelminæ, Subfamily, Howard, Ent. Amer., I., p. 198.
1897. Eupelminæ, Subfamily I., Ashmead, Proc. Ent. Soc. Washington, IV., p. 238.

This subfamily is quite distinct from the other two subfamilies, and is easily recognized by the structural peculiarities of the mesonotum brought out in my table of subfamilies.

A full account of the group is given in my paper entitled, "On the Genera of the Eupelminæ," published in the Proceedings of the Entomological Society of Washington for 1896. Since that paper was published, however, a new tribe and some new genera have been recognized; these are characterized below.

TABLE OF TRIBES.

Mesonotum in females always depressed or impressed, concave or subconcave, medially with usually a triangular elevation anteriorly, the parapsidal furrows not, or rarely, sharply defined, never short; in males subconvex, with the furrows rarely complete, not short nor curved off laterally..... Tribe I. Eupelmini.
Mesonotum convex in both sexes, the parapsidal furrows delicate, but always complete, short and strongly curved off laterally, the scapulæ short.................................. Tribe II. Tanaostigmini.

TRIBE I. *Eupelmini*.

The impressed and incomplete mesonotal furrows in the females distinguish the group. The males are not so readily defined, and are easily mistaken for males in the family *Cleonymidæ*, the mesonotum being sometimes subconvex, with the furrows complete or incomplete; the mesopleura are, however, usually *entire* and this peculiarity, together with the venation, the structural characters of the head, the antennæ and the metathorax, will, in most cases, distinguish these insects.

TABLE OF GENERA.

1. Females 2
   Males 37
2. Hind tibiæ and first tarsal joint compressed and broad 3
   Hind tibiæ and first tarsal joint neither compressed nor broad (rarely with the hind tibiæ slightly compressed) 4

3. Eyes hairy ; antennæ 13-jointed ; axillæ meeting at base of scutellum.......... **Metapelma** Westwood (type *M. spectabilis* Westw.).

4. Front femora much swollen.......... 5

Front femora normal, or not much swollen.......... 6

5. Winged ; front femora armed with minute spines beneath ; ovipositor very long.... **Oodera** Westwood (type *O. gracilis* Westw.).

Wingless ; front femora unarmed ; ovipositor subexserted ; head large, quadrate ; eyes rounded, bare ; temples broad.......... **Ooderella** Ashmead (type *O. smithii* Ashm.).

6. First tarsal joint of middle legs *without* strong spines beneath, at most with hairs.......... 7

First tarsal joint of middle legs *with* strong spines or minute black teeth beneath.......... 8

7. Mesonotum not impressed ; axillæ triangular, meeting at base of scutellum..... **Charitopus** Förster (type *C. fulviventris* Först.).

8. Face deeply excavated, the front ocellus always placed in the furrow.......... 9

Face rarely deeply excavated, although often with deep antennal furrows, the front ocellus never placed in the furrow.......... 12

9. Middle tibiæ very long.......... 10

Middle tibiæ not very long.......... 11

10. Antennæ inserted near the border of the mouth........ **Stenoceroides** Dalla Torre = *Stenocera* Walker (type *S. walkeri* Curtis).

Antennæ inserted far above the mouth border ; postmarginal vein greatly lengthened.
Polymoria Förster (type *P. coronata* Thomson).

11. Axillæ not united at base of the scutellum, their inner suture strongly curved ; postmarginal vein very short, scarcely developed, or rarely longer than the stigmal vein.......... **Eusandalum** Ratzeburg = *Balcha* Walker = *Ratzeburgia* Förster (type *E. abbreviatum* Ratz.).

12. Eyes hairy or pubescent.......... 13

Eyes bare.......... 14

13. Scutellum with a broad base against the mesonotum, the axillæ being widely separated.......... 26

Scutellum with a narrow base against the mesonotum, the axillæ approximate or united at base of scutellum.......... 17

14. Hind tibiæ with 2 apical spurs.......... 15

Hind tibiæ with 1 apical spur.......... 16

15. Antennæ inserted below the middle of the face ; stigmal vein very long, curved.... **Calosoter** Walker (type *Pteromalus eneubalus* Walk.).

Antennæ inserted above the middle of the face ; stigmal vein very short.......... **Chirolophus** Haliday (type *C. eques* Haliday).

16. Head large, transverse, wider than the thorax, the eyes large, oblong oval, convergent above, the vertex, however, not especially narrow, the lateral ocelli close to the eyes but not touching the inner margin ; antennæ subclavate, inserted a little below the base of the eyes, and widely separated ; abdomen depressed, not longer than the thorax, the ovipositor hidden.......... **Solindenia** Cameron (type *S. picticornis* Cam.).

17. Second dorsal abdominal segment short, not incised at apical margin.......... 18

Second, third and fourth dorsal abdominal segments usually incised medially at apical margin, the second the largest segment.......... 19

18. Stigmal vein not short ; abdomen oval, narrower than the thorax, ovipositor exserted.
Brasema Cameron (type *B. brevispina* Cam.).

19. Abdomen at the most with dorsal segments 1 to 3 incised at apical middle; sometimes with only the first and second incised 20

Abdomen with dorsal segments 2 to 5 incised or emarginate at apical margin 25

20 Second abdominal segment not as long as all the segments united 21

Second abdominal segment as long as all the segments united 24

21. Eyes neither especially large nor strongly convergent above (although somewhat convergent), the vertex not very narrow, the hind ocelli not approximate 22

Eyes very large, strongly convergent above, the vertex narrow, the hind ocelli very approximate, the front ocellus placed far anteriorly 23

22. Frons with a deep Λ-shaped antennal furrow; antennæ 13-jointed, ringed with white, inserted close to the mouth.......... **Idoleupelmus** Ashmead (type *I. annulicornis* Ashmead).

Frons deeply grooved; antennæ 13-jointed, but not ringed with white, clavate, obliquely truncate at apex from beneath, inserted on or near the middle of the face; abdomen longer than the head and thorax united, the dorsal segments 1–3 incised at apical middle.......... **Macreupelmus** Ashmead (type *M. brasiliensis* Ashmead).

23. Abdomen spatulate; occiput with a bunch of deep black bristles behind the ocelli. **Tineobius** Ashmead (type *T. citri* Ashmead).

Abdomen long, oblong-oval; occiput normal..... **Ischnopsis** Ashmead (type *I. ophthalmica* Ashmead).

24. Eyes converging above; antennæ inserted on the middle of the face.......... **Lutnes** Cameron (type *L. ornaticornis* Cam.).

25. Scape long and more or less compressed; postmarginal vein very long, the stigmal vein curved, not short.......... **Cerambycobius** Ashmead (type *Eupelmus cleri* Ashm.).

26. Wingless or subapterous 27

Winged 29

27. Metathoracic angles normal; antennæ inserted only a little below the middle of the face, never close to the mouth border; face without transverse furrows.......... 28

Metathoracic angles spined; antennæ inserted close to the mouth border; face with transverse furrows. **Myrmecomimesis** Dalla Torre (type *Myrmecopsis nigricans* Walk.).

28. Abdomen with dorsal segments 2 to 6 not incised at apical middle.......... **Eupelminus** Dalla Torre (type *Urocryptus excavatus* Westw.).

Abdomen with dorsal segments 2 to 6 more or less incised or emarginate at apical middle (apterous forms).......... **Eupelmus** Dalman.

29. Abdomen long, conic-ovate, oblong, or conically acuminate, as long or much longer than the head and thorax united, the dorsal flap always deeply incised at apical middle.......... 30

Abdomen clavate or spatulate, broadened behind, narrowed toward the base, not as long as the thorax or shorter than the head and thorax united, depressed or flat above, the dorsal flaps not incised or the incision is not very deep 33

30. Ovipositor shorter than the body, usually shorter than the abdomen.......... 31

Ovipositor always longer than the entire body, usually very much longer.......... 32

31. Antennæ inserted a little *below* the middle of the face, on or above an imaginary line drawn from the base of the eyes, rarely a little below it.......... **Eupelmus** Dalman (type *E. memnonius* Dalm.).

Antennæ inserted above the middle of the face, or at least never below the middle.

Axillæ widely separated at base of scutellum; wings not short, the marginal vein long, the stigmal vein very short, the postmarginal long; antennæ 13-jointed...... **Charitolophus** Förster (type *C. cœrulescens* Först.).

Axillæ approximate; wings short, somewhat narrowed; antennæ 9-jointed (*teste* Motschulsky). **Cacotropia** Motschulsky (type *C. echidna* Motsch.).

32. Scape compressed, extending far beyond the ocelli; scutellum *without* a tuft of long stiff bristles at apex; abdomen elongate, the dorsal flap and segments 2–4 incised at apical middle; ovipositor very much longer than the entire insect.................. **Phlebopenes** Perty (type *P. splendidus* Perty).

Scape long, slender, cylindrical, extending only a little above the ocelli; scutellum with a tuft of long stiff black bristles, as in *Encyrtus* Latr.; abdomen not so elongate, segments 2–5 at apex, excised medially; ovipositor a little longer than the entire insect; front wings with a broad fuscous band across the middle................... **Encyrtaspis** Ashmead, g. nov. (type *E. brasiliensis* Ashm.).

33. Head viewed from in front normal, at least as long as wide, or at least only a little wider than long; antennal furrows not very deep and very short; eyes oblong or ovate........................ 34

Head viewed from in front about twice as wide as long, the antennal furrows very deep; eyes round, strongly convergent above; postmarginal vein not longer than the stigmal. **Lecaniobius** Ashmead (type *L. cockerellii* Ashm.).

34. Scutellum normal, *without* a tuft of hairs.. 35

Scutellum *with* a fascicle of hairs; club of antennæ compressed.................. **Hoplopsis** Destefani (type *H. mayri* Destefani).

35. Malar furrow distinct; no carina from the lower part of each eye to base of each antenna; antennæ inserted on or somewhat below an imaginary line drawn from base of eyes, rarely slightly above this line.................................. **Anastatus** Motschulsky (type *A. mantoidæ* Motsch.).

Malar furrows indistinct or subobsolete; a distinct carina extends from the lower part of each eye to the base of each antenna; antennæ inserted just above the clypeus........ **Arachnophaga** Ashmead (type *Eupelmus piceus* How.).

36. Hind tibiæ and first tarsal joint compressed, broad.. 37

Hind tibiæ and first tarsal joint simple, the tibiæ rarely slightly compressed, never broad, the first tarsal joint always cylindrical.. 38

37. Eyes hairy; flagellum subclavate, obliquely truncate at tip................ **Metapelma** Westwood

38. Front femora much swollen... 39

Front femora normal.. 40

39. Front femora armed with minute spines beneath............................ **Oodera** Westwood.

Front femora not armed with minute spines beneath........................ **Ooderella** Ashmead.

40. Antennæ ramose or branched... 41

Antennæ simple, without branches... 42

41. Flagellum with *four* branches.

  Eyes bare.................................... **Chirolophus** Haliday (type *C. eques* Hal.).

  Eyes hairy.............................. **Chiritolophus** Förster (type *C. cæruleseens* Först.).

42. Antennæ inserted near the middle of the face or *above* an imaginary line drawn from the base of the eyes.. 43

Antennæ inserted just above the clypeus or below an imaginary line drawn from the base of the eyes. 48

43. Mesonotal furrows incomplete or wanting at the most vaguely impressed or indicated only anteriorly and converging and ending near the middle of the scutum.. 44

Mesonotal furrows distinct, entire... 45

44. Axilla united or not widely separate at the base of the scutellum........................... 46

Axillæ well separated at base of the scutellum.

  Stigmal and postmarginal veins short, the latter the shorter, always much abbreviated; hind sutures of axillæ curved; scape not compressed................ **Eusandalum** Ratzeburg.

  Stigmal and postmarginal veins not short, the latter a little the longer; hind sutures of axillæ straight; scape somewhat compressed .... **Calosoter** Walker. = Calosota

45. Hind tibiæ not compressed.. 48
Hind tibiæ compressed.
Pedicel not small, obconical, larger than the first joint of the flagellum. ? genus
46. Eyes pubescent.. **Macreupelmus** Ashmead.
47. Postmarginal vein long, twice or nearly twice as long as the stigmal vein; scape short; flagellum filiform, clothed with a dense pubescence; pedicel minute.
Joints 1–7 of funicle always longer than thick, the club-joints not very long.
Cerambycobius Ashmead.
Joints of funicle very short, thicker than long, the club-joints usually very long.
Anastatus Motschulsky.
48. Hind tibiæ somewhat compressed.
Pedicel obconic, smaller than the first joint of the funicle, the joints of the flagellum, except sometimes 6 and 7, longer than thick; dorsal abdominal segments not incised medially at apex.
Arachnophaga Ashmead.

TRIBE II. *Tanaostigmini.*

This little group is allied to the subfamily *Encyrtinæ*, in which group Dr. Howard first placed his genus *Tanaostigma*, and also to the family *Cleonymidæ*, where, deceived by a male specimen, I first placed the genus *Eutrichosoma*. Additional specimens, and the discovery of two new genera have enabled me to see more clearly the affinities and relationship of the group to other chalcidids, and I believe other discoveries will confirm my views in assigning it a position with the *Eupelminæ* rather than with the *Encyrtinæ*.

TABLE OF GENERA.

1. Female.. 2
Males.. 5
2. Scape of antennæ slender, not at all dilated.. 4
Scape of antennæ broadly dilated beneath, or dilated, or compressed its entire length.
Scape compressed or dilated its entire length.. 3
Scape broadly dilated beneath; flagellum flattened, the joints of the funicle subpedunculate and much wider than long; postmarginal vein shorter than the stigmal, the latter long; postmarginal vein shorter than the stigmal, the latter long, nearly perpendicular with the front margin; abdomen not longer than the thorax, the ovipositor slightly exserted.
Tanaostigma Howard (type *T. coursetiæ* Howard).
3. Flagellum subclavate, the joints of the funicle cylindrical, a little longer than thick; postmarginal vein about as long as the stigmal vein, the latter not short; body bare; abdomen as long as or a little longer than the head and thorax united.............. **Tanaostigmodes** Ashmead (type *T. howardii* Ashm.).
Flagellum subcompressed, the funicle joints, or at least 1 to 3, wider than long; body well clothed with short, scale-like white hairs; abdomen subglobose, scarcely as long as the thorax, the ovipositor subexserted........................ **Trichencyrtus** Ashmead, gen. nov. (type *T. chapadæ* Ashm.).
4. Body clothed with short scale-like white hairs; scape very slender, the flagellum stout, pubescent, the joints wider than long; wings glabrous, the stigmal vein ending in a knob, slightly curved and as long as the marginal vein, the postmarginal vein wanting........................ **Eutrichosoma** Ashmead (type *E. mirabile* Ashm.).

5. Flagellum filiform, *without* branches 6
  Flagellum with four branches.
    Body bare or nearly.
      Branches of flagellum long........ **Tanaostigma** Howard.
      Branches of flagellum short .... **Tanaostigmodes** Ashmead.
    Body well clothed with short, stout, scale-like white hairs .... **Trichencyrtus** Ashmead.
6. Body well clothed with short, stout, scale-like white hairs: wings glabrous, the stigmal vein curved, as long as the marginal vein and ending in a knob, the postmarginal vein absent; scape very slender, the joints of the funicle much wider than long and briefly but distinctly pedicellate. **Eutrichosoma** Ashmead.

SUBFAMILY II. ENCYRTINÆ.

1840. Encyrtides, Subfamily 4 (partim), Westwood, Intro. Mod. Class Ins. Synop., p. 72.
1856. Encyrtoidæ, Familie 5, Förster, Hym. Stud., I., p. 18.
1875. Encyrtina, Tribus, Thomson, Hym. Skand., IV., pp. 12 and 112.
1886. Encyrtinæ, Subfamily, Howard, Ent. Amer., I., p. 198.
1897. Encyrtinæ, Subfamily II., Ashmead, Proc. Ent. Soc. Washington, IV., p. 248.
1900. Encyrtinæ, Subfamily II., Ashmead, Proc. U. S. Nat. Mus., XXIII., p. 324.

This subfamily was fully characterized in my paper, "On the Genera of the Encyrtinæ," published in 1900.

The four tribes into which it was divided may be recognized by the aid of the following table:

TABLE OF TRIBES.

1. Mandibles bi- or *tri*-dentate, or broadly truncate at apex, never acute; tarsi always 5-jointed 2
  Mandibles dentate, acute at apex........ 5
2. Mandibles at apex, bidentate or, truncate........ 3
  Mandibles at apex tridentate, the teeth sometimes very minute; labrum usually conspicuous........ 4
3. Mandibles not stout, or only moderately so, rather long and always bidentate at apex; labrum free; abdomen in females with the hypopygium large, lanceolate or plowshare-shaped, inclosing the ovipositor, and extending beyond the anus; the second segment most frequently large; antennæ usually inserted just above the clypeus, rarely just below the middle of the face. Tribe I. Ectromini.
  Mandibles stout, but short and polished, the apex broadly truncate, unarmed or nearly so; labrum conspicuous; abdomen with the hypopygium less evidently prominent, not projecting; body usually stout, not metallic; hind tibiæ with *two* spurs; antennæ inserted below the middle of the face. Tribe II. Encyrtinæ.
4. Hind tibiæ with *one* apical spur; hypopygium not prominent; body most frequently, but not always metallic; antennæ variable........ Tribe III. Mirini.
5. Tarsi 4- or 5-jointed; marginal vein punctiform, or subobsolete........ Tribe IV. Arrhenophagini.

TRIBE I. *Ectromini.*

In this tribe the species are usually more elongate and narrower, the marginal vein proportionately longer, with the stigmal vein shorter, while the mandibles are always narrower and bidentate. In the females the hypopygium is usually prominent.

TABLE OF GENERA.

1. Females 2

Males 24

2. Face with a distinct carina between the base of the antennæ 15

Face without such a carina, rarely with a rounded ridge; antennæ inserted just above the clypeus, or below the middle of the face.

Wingless or subapterous species 11

Winged species 3

3. Front wings with the marginal vein rather long, twice as long as the stigmal vein, or even longer, always much longer than the stigmal 4

Front wings with the marginal vein short, the postmarginal vein very short 10

4. Stigmal and postmarginal veins not short, or rarely short, the postmarginal vein most frequently longer than the stigmal 5

Stigmal and postmarginal veins short; scape slender, cylindrical.

Wings fuscous, marked with white bands or rays; frons broad, the lateral ocelli nearer to the eye margin than to the front ocellus. **Calocerinus** Howard (type *Tetracnemus floridanus* Ashm.).

Wings hyaline; frons not so broad, the lateral ocelli not nearer to the eye margin than to the front ocellus .... **Tetralophidia** Ashmead (type *T. bakeri* Ashm.).

5. Funicle 6-jointed, without ring-joints. 6

Funicle 4-jointed, with *two* ring-joints.

Frons minutely shagreened, with minute punctures scattered over the surface; scape slender, cylindrical, the flagellum at the most subclavate; stigmal vein very oblique, subclavate.

Meromyzobia Ashmead (type *Ericydnus maculipennis* Ashm.).

6. Stigmal and postmarginal veins short, the latter sometimes hardly developed; front wings with a discoidal blotch 7

Stigmal and postmarginal veins not short, usually long, the latter the longer, sometimes as long as the marginal; front wings without a discoidal blotch 8

7. Frons very minutely shagreened, with minute punctures scattered over the surface, or almost smooth.

Head viewed from in front longer than wide; scutellum *with* a tuft of long hairs; abdomen scarcely longer than the head and thorax united, the ovipositor not or scarcely exserted; flagellum gradually broadened towards apex, compressed, the pedicel hardly as long as the first joint of the funicle; the joints after the third broader than long.

Chrysopophagus Ashmead (type *C. compressicornis* Ashm.).

Head viewed from in front not longer than wide, if anything a little wider than long; scutellum *without* a tuft of long hairs; abdomen distinctly longer than the head and thorax united, with a prominent ovipositor which is longer than half the length of the abdomen; flagellum subclavate, not compressed, the funicle joints longer than thick .... **Tineophoctonus** Ashmead (type *Phænodescus armatus* Ashm.).

8. Frons regularly punctate, or broad and smooth, margaritaceously shining 9

Frons minutely shagreened, with minute punctures scattered over the surface; scape not compressedly dilated beneath, either cylindrical or subcylindrical.

Antennæ not longer than the body, usually somewhat shorter, the first joint of the flagellum rarely more than twice as long as thick; stigmal vein not curved; axillæ just meet at inner basal angles .... **Ericydnus** Walker (type *Encyrtus longicornis* Dalm.).

Antennæ longer than the body, the first joint of the flagellum about five times as long as thick; stigmal vein gently curved; axillæ unite and form a slight ridge at base of scutellum.
Leptomastix Förster (type *L. histrio* Mayr).

9. Frons regularly punctate; scape beneath broadly compressedly dilated, the flagellum long, filiform, cylindrical; scutellum triangular, acute at apex, the axillæ separated.......... **Dinocarsis** Förster (type *Encyrtus hemipterus* Dalm.).

Frons broad and smooth, margaritaceously shining, or at the most feebly shagreened; scape long, slender, the flagellum long, subcylindrical, feebly compressed, the first joint the longest, somewhat more than twice as long as thick; scutellum bifoveate at base................ **Ectroma** Westwood (type *Eupelmus rufus* Dalm.).

10. Frons finely shagreened or alutaceous, subopaque; lateral ocelli close to the eye margin; scape usually broadly compressedly dilated beneath, the flagellum *slender, cylindrical;* axillæ not quite meeting at inner basal angles; front wings with a hairless line extending obliquely inward from the stigmal vein.................................... **Anagyrus** Howard (type *A. greenii* How.).

Frons narrow, almost smooth; lateral ocelli close to the eye margin; scape broadly dilated beneath, the flagellum *compressed, fusiform,* as seen from the side; axillæ meet at inner basal angle.
Anusia Förster (type *Ectroma fulvescens* Westw.).

11. Frons regularly punctate, coriaceous or shagreened, with distinct scattered punctures over the surface.. 12

Frons smooth, margaritaceously shining, or at the most microscopically shagreened............. 13

12. Scutellum triangular, acute at apex; scape dilated and compressed beneath....... **Dinocarsis** Förster.

Scutellum subtriangular, rounded, not acute at apex; scape slender, cylindrical or at most subclavate.

Flagellum filiform or subclavate, *not* compressed; axillæ touching each other at base of scutellum.

Funicle 4-jointed, with 2 ring-joints; ocelli normal, the lateral close to the eye margin, but not touching it.. **Meromyzobia** Ashmead.

Funicle 6-jointed, with no ring-joint; ocelli very minute, the lateral lying close to the eye margin.. **Ericydnus** Walker.

Flagellum compressed; axillæ separated, not touching each other at base of scutellum; lateral ocelli not close to the eye margin; ovipositor exserted, the hypopygium very prominent.
Henicopygus Ashmead (type *H. subapterus* Ashm.).

13. Scutellum subtriangular; head transverse.

Scutellum without foveæ 14

Scutellum bifoveate at base.

Scape and flagellum not at all compressed, cylindrical........... **Ectroma** Westwood.

14. Scutellum normal; scape broadly dilated beneath, the flagellum compressed, fusiform.
Anusia Förster.

Scutellum lunate; head seen from above subquadrate, wider than the thorax, the lateral ocelli rather close to the eye margin; thorax with a silvery pubescence...................... **Bæocharis** Mayr (type *B. pascuorum* Mayr).

15. Frons not broad.. 16

Frons broad, sublenticular, the occipital margin acute.

Front wings with the postmarginal and stigmal veins rather long, equal, not or scarcely shorter than the marginal; clypeus excised at apex; antennæ long, filiform, somewhat distant at base, the pedicel shorter than the first joint of the funicle.......... **Stenoterys** Thomson (type *S. orbitalis* Thoms.).

Front wings with the marginal and postmarginal veins very short, the latter scarcely developed, the marginal vein almost punctiform; clypeus normal; antennæ long, cylindrical, subclavate, the scape slender, the pedicel twice as long as the first joint of funicle.
Tetracnemoidea Howard (type *T. australiensis* How.).

16. Axillæ united at the inner basal angles, or at least touching each other........................ 17

Axillæ widely separated at inner basal angles; postmarginal vein not developed.

Eyes rounded; antennæ inserted far anteriorly below an imaginary line drawn from the base of the eyes........................**Tetracnemus** Westwood (type *T. diversicornis* Westw.).

17. Eyes bare, not pubescent.. 18

Eyes pubescent.

Marginal vein a little shorter than the stigmal vein, the postmarginal vein at least as long as the stigmal vein; flagellum clavate; the funicle joints short, wider than long.
Habrolepoidea Howard (type *H. glauca* How.).

18. Wings hyaline.. 19

Wings fuscous, with white rays or bands.. 23

19. Marginal vein punctiform, not longer than thick, the postmarginal vein *not* developed.......... 22

Marginal vein not punctiform.

Marginal vein always longer than the stigmal vein.. 20

Marginal vein always shorter than the stigmal vein.. 21

20. Marginal vein about thrice as long as the stigmal vein, the postmarginal vein not longer than the shaft of the stigmal vein, the latter short, perpendicular; axillæ just meet at their inner basal angles; pronotum very short, scarcely visible from above; mesonotum scaly punctate, or reticulate.
Tetralophiellus Ashmead (type *T. brevicollis* Ashm.).

Marginal vein only a little longer than the stigmal vein, the postmarginal vein very short, hardly developed; axillæ meet at inner basal angles; pronotum not short, conical; mesonotum smooth; antennæ not short, subclavate......................**Tetracladia** Howard (type *T. texana* How.).

21. Marginal vein fully twice as long as thick or about half the length of the stigmal vein, the postmarginal vein only slightly developed; antennæ clavate, the club ovate, 3-jointed, much stouter than the funicle, the scape more than twice as long as thick at apex; funicle joints one fourth longer than thick; pronotum very short, transverse linear; mesonotum microscopically reticulate; hypopygium very prominent, plowshare-shaped......................**Tetracnemopsis** Ashmead (type *Tetracnemus westwoodii* Ckll.).

22. Antennæ subclavate, the pedicel hardly longer than thick at apex, but longer than the first joint of the funicle; funicle joints submoniliform; pronotum very short; mesonotum shagreened or scaly punctate....................................**Pentacnemus** Howard (type *P. bucculatricis* How.).

23. Marginal vein about twice as long as thick, not longer than the stigmal, the postmarginal vein hardly so long; axillæ not quite meeting an inner basal angles; antennæ subclavate, inserted close to the mouth, the scape long, slender, only slightly thickened towards apex; funicle joints 1–2 subequal, hardly longer than thick, the following gradually increasing in thickness; eyes very large; frons narrow; mesonotum smooth, metallic, a little shorter than the scutellum, the latter opaque, shagreened; abdomen ovate, shorter than the thorax, depressed.......**Habrolepopteryx** Ashmead (type *Psilophrys pulchripennis* Ashm.).

24. Epistoma *not* carinate.. 25

Epistoma carinate.. 39

25. Antennæ ramose, *with* 4 branches.. 26

Antennæ simple, *without* branches, the scape and flagellum sometimes dilated or compressed...... 27

26. Marginal vein rather long, the stigmal and postmarginal veins short.

Wings with fuscous rays; lataral ocelli nearer to the eye margin than to the front ocellus; axillæ meeting at base of scutellum .... **Calocerinus** Howard.

Wings hyaline; lateral ocelli not nearer to the eye margin than to the front ocellus; axillæ not quite meeting at base of the scutellum.......................... **Tetralophidea** Ashmead.

27. Winged forms.. 28

Wingless or subapterous forms.. 36

28. Front wings with the marginal vein linear, longer than the stigmal, the postmarginal vein rather short, hardly so long as the stigmal or clearly shorter, the stigmal vein bent so as to be nearly parallel with it.. 28

Front wings with the marginal vein usually shorter, the stigmal and postmarginal veins short, or the stigmal vein is longer than the marginal and postmarginal veins united, or if with the marginal vein long or somewhat long, the stigmal and postmarginal veins are not short, the stigmal vein not bent so as to be nearly parallel with the marginal... 29

28. Frons and scutellum finely coriaceous, the thorax metallic or submetallic, with silvery hairs; flagellum filiform, the joints subequal, at least three times as long as thick, with long, sparse hairs.
Chrysopophagus Ashmead.

29. Marginal vein long or somewhat long, the stigmal and postmarginal veins not short............. 30

Marginal vein usually shorter, the stigmal and postmarginal veins short, or the stigmal vein longer than the short marginal and postmarginal veins united...................................... 34

30. Frons minutely shagreened, with some minute punctures scattered over the surface 31

Frons broad, smooth, margaritaceously shining, impunctate 33

31. Antennæ 11-jointed, with a 6-jointed funicle.. 32

Antennæ 9-jointed, with a 4-jointed funicle............................ **Meromyzobia** Ashmead.

32. Antennæ not longer than the body, the joints of the flagellum closely united and clothed with a short, dense pubescence .... **Ericydnus** Walker.

Antennæ much longer than the body, the joints of the flagellum subpedunculate and each joint furnished with two whorls of long hairs.................................. **Leptomastix** Förster.

33. Antennæ long, filiform, 9-jointed, feebly compressed.......................... **Ectroma** Westwood.

34. Marginal vein slender, not stout. 35

Marginal vein rather short and stout, the stigmal and postmarginal veins very short.

Scape usually broadly dilated below, the flagellum slender, cylindrical..... **Anagyrus** Howard.

35. Stigmal vein long; scape long, dilated and compressed beneath, the flagellum filiform, clothed with a short dense pile; scutellum triangular, acute at apex; body shagreened........ **Dinocarsis** Förster.

Stigmal vein short; scape broadly compressedly dilated beneath, the flagellum compressed, fusiform, broadest towards the middle and gradually tapering off towards apex............. **Anusia** Förster.

36. Scutellum lunate 38

Scutellum triangular or subtriangular, never lunate.

Frons smooth, shining, somewhat iridescent.. 37

Frons shagreened or feebly punctate.

Scape and flagellum normal, the latter clothed with a short, dense pile.
Ericydnus Walker.

37. Scutellum bifoveate at base; scape and flagellum not at all compressed, cylindrical.
Ectroma Westwood.

Scutellum not foveate at base; scape broadly dilated beneath, the flagellum compressed, fusiform.
Anusia Förster.

38. Frons convex, finely coriaceous; scape rather short, clavate, the pedicel twice as long as thick at tip, longer than the first funicle joint..**Bæocharis** Mayr.

39. Frons not broad.. 40

Frons broad; axillæ united at inner basal angles.

Antennæ long, fusiform, *without* branches, and inserted rather high up on the face, the flagellum clothed with sparse black pile..............................**Stenoterys** Thomson.

Antennæ *with* 4 branches, a branch on joints 1 to 4 of funicle.....**Tetracnemoidea** Ashmead.

40. Axillæ united or touching each other at their inner basal angles; antennæ either simple or ramose 41

Axillæ either widely separated or at least not touching each other at their inner basal angles.

Antennæ with 4 branches...................................**Tetracnemus** Westwood.

41. Eyes bare, *not* pubescent.. 42

Eyes pubescent.

Marginal vein a little shorter than the stigmal, the postmarginal vein at least as long as the stigmal vein, flagellum hairy, *without* branches....................**Habrolepoidea** Howard.

42. Antennæ with *five* long branches.. 44

Antennæ with *four* long branches.

Marginal vein not thrice as long as the stigmal vein; *postmarginal vein very short or not developed*.. 43

Marginal vein about thrice as long as the stigmal vein, the postmarginal vein short; pronotum very short..**Tetralophiella** Ashmead.

43. Marginal vein only a little longer than the stigmal; pronotum not short, conical, at least as long as the mesonotum..**Tetracladia** Howard.

Marginal vein only about thrice as long as thick or about half the length of the stigmal; pronotum *very* short...**Tetracnemopsis** Ashmead.

44. Marginal vein punctiform, not half the length of the stigmal, the postmarginal wanting.
Pentacnemus Howard.

TRIBE II. *Encyrtini.*

The species falling in this tribe are broad and robust, the mandibles being broad and stout, truncate at apex, and edentate or nearly; the labrum is conspicuous; the antennæ are very similar in both sexes; the marginal vein in the front wings is short, the stigmal and postmarginal veins being usually long; in the hind wings the marginal cell is long and broad, while the hind tibiæ have *two* apical spurs.

TABLE OF GENERA.

1. Metathorax with the lateral ridge bare; spurs of hind tibiæ nearly equal........................ 2

Metathorax with the lateral ridge or at least the metapleura clothed with a silvery white pubescence; spurs of the hind tibiæ unequal.. 3

2. Frons broad with a sparse, thimble-like punctuation, thicker towards the scrobes; stigmal and postmarginal veins long, nearly equal in length and three or more times longer than the marginal; apical half or more of front wings usually infumated; scape long and slender.

Scutellum *with* a tuft of long hairs towards apex; first joint of the flagellum hardly so long as the second..............................**Encyrtus** Latreille (type *Chrysis infidus* Rossi).

Scutellum *without* a tuft of long hairs; first joint of the flagellum a little longer than the second.
Howardiella Dalla Torre (type *Bothriothorax peckhami* Ashm.).

3. Frons not broad, nearly smooth, opaque or minutely shagreened, or with only a few minute punctures; stigmal and postmarginal veins unequal, the latter only slightly developed, the marginal vein very short, nearly punctiform; front wings hyaline but with a discoidal cloud. . . . .**Prionomastix** Mayr (type *Encyrtus morio* Dalman).

TRIBE III. *Mirini.*

In this tribe fall the vast majority of the genera of the subfamily *Encyrtinæ*, distinguished from the others by the mandibles, which are somewhat differently shaped, and *tridentate* at apex. The tribe was fully discussed in the Proceedings of the U. S. National Museum for 1900. The table of the genera published below is practically the same as published in that work, except that some slight changes have been made to enable me to incorporate some interesting new genera unknown at that time.

TABLE OF GENERA.

1. Females. 2

Males. 58

2. Mandibles rather long, with acute teeth, the apical tooth usually the longest, rarely with the two apical teeth longer than the inner; labrum conspicuous; front very closely punctate, or finely coriaceous, the thimble-like punctures absent, or the punctures smaller or more sparsely scattered; wings not ornate, and usually with a very short, or a punctiform, marginal vein, the hind wings usually with a long costal cell that extends to the booklets; abdomen usually more or less compressed towards apex, the ventral valve extending to the anus but not plowshare-shaped; head as viewed from in front usually somewhat longer than wide, often much longer than wide, or subtriangular, the scrobes forming a triangle 3

Mandibles shorter, with the teeth smaller, less acute and equal or nearly; labrum not conspicuous; frons frequently but not always with a series of large, thimble-like punctures; wings variable, frequently ornate or dusky, although often hyaline; scrobes usually semicircular. 13

3. Marginal vein punctiform, not or scarcely longer than thick (very rarely twice as long as thick), the postmarginal vein not at all or only slightly developed, very rarely as long as the stigmal vein; stigmal vein is rather long, always more than twice the length of the marginal, or much longer; body metallic or lustrous 4

Marginal vein *not* punctiform, at least twice as long as thick, but usually much longer, the postmarginal vein longer than the stigmal vein 12

4. Head viewed from in front long, subtriangular, much longer than wide, the cheeks, or malar space, long. 5

Head viewed from in front not or scarcely longer than wide, the cheeks, or malar space, not especially long 11

5. Front wings *with* a marginal fringe. 6

Front wings *without* a marginal fringe.

Antennæ very long and slender, the flagellar joints all very long, cylindical, the sixth being at least four times as long as thick, the preceding still longer.. . . . .**Psilophrys** Mayr (type *Encyrtus longicornis* Walk.).

6. Pedicel fully three times or more longer than thick at apex. 7

Pedicel *not* three times as long as thick at apex. 10

7. Flagellum very long, two or more times longer than the scape, the funicle joints all cylindrical..... 8

Flagellum not so long, at the most not more than one and a half times the length of the scape, the funicle joints gradually decreasing in length, not all the joints longer than thick, some at least wider than long.. 9

8. Antennæ very long and slender, as in *Psilophrys*, the scape very long and slender; cheeks not quite the length of the eyes; ovipositor very long......**Parapsilophrys** Howard (type *P. gelechiæ* How.).

Antennæ long and slender but shorter than in *Psilophrys*, about twice as long as the scape, the joints of the funicle long and cylindrical, the club not or only a little thicker than the last joint of the funicle; cheeks long..........................**Liothorax** Mayr (type *Encyrtus glaphyra* Walker).

9. Flagellum at the most about one and a half times the length of the scape, the funicle joints gradually decreasing in length, some toward the apex transversely; club much thickened; obliquely truncate from beneath; head and mesonotum finely, closely punctate or shagreened; frons somewhat narrowed; eyes bare.......................**Litomastix** Thomson (type *Encyrtus chalconotus* Dalm.).

Flagellum short, not much longer than the scape; the funicle joints, except the first, not longer than thick; club stout, broader than the funicle; frons broad; eyes faintly hairy. **Berecyntus** Howard (type *B. bakeri* Howard).

10. Cheeks as long as the eyes or nearly; antennæ rather long, the funicle joints, however, rarely more than twice as long as thick, gradually thickening apically; the sixth joint never much longer than wide and sometimes wider than long...........**Copidosoma** Ratzeburg (type *C. boucheanus* Ratz.).

11. Cheeks more than half the length of the eyes; pedicel hardly twice as long as thick; the flagellum not long; the joints of the funicle, except the first, small, not longer than thick, submoniliform, but gradually increasing in size...................**Prionomitus** Mayr (type *Encyrtus mitratus* Dalm.).

Cheeks very short, nearly obsolete; pedicel three times as long as thick, the flagellum short, clavate, the joints of the funicle annular, wider than long, the club greatly enlarged, longer than the funicle; mesonotum short, twice as wide as long, the pronotum not visible from above; frons very narrow, the lateral ocelli close to the eye margin; eyes large, rounded, pubescent. **Archinus** Howard (type *A. occupatus* How.).

12. Mesonotum smooth, impunctate, blue or metallic; pedicel about thrice as long as thick, the flagellum long, the joints of the funicle much longer than thick, the club somewhat stouter than the funicle; eyes pubescent; scutellum, but not the axillæ, shagreened...............**Parencyrtus** Ashmead. (type *P. brasiliensis* Ashmead).

Mesonotum feebly, sparsely punctate, metallic blue or blue-green; pedicel hardly twice as long as thick, the flagellum long and slender, joints 4–5 twice longer than thick, cylindrical, the club 3-jointed, not thicker than the funicle; eyes large, glabrous; scutellum, as well as the axillæ, sculptured............................**Cerchysius** Westwood (type *Encyrtus subplanus* Dalm.).

13. Abdomen globose, or subovate, much shorter than the thorax, compressed, clothed with a rigid white pubescence, the second segment usually large, smooth medially; species sometimes apterous. 14

Abdomen with the dorsum flat or concave, not rigidly pubescent.............................. 16

14. Pronotum not large; antennæ simple, the flagellum usually long, subclavate, but not broad nor compressed.. 15

Pronotum large, conical, longer than the mesonotum; antennæ with the scape and the flagellum broad, strongly compressed; abdomen globose..... **Mira** Schellenberg (type *M. macrocera* Schell.).

15. Head above rounded, seen from in front much longer than wide; frons narrow; scape long and slender; scutellum not longer than the mesonotum, coriaceous; abdomen ovate, as long as the thorax. **Sphæropisthus** Thomson (type *S. pascuorum* Thomson).

Head seen from in front not longer than wide; frons broad; antennæ not long, inserted on a line with the base of the eyes, flagellum subclavate, the funicle joints, or at least joints 3–6, wider than long; scutellum large, longer than the mesonotum; front wings with a substigmal cloud; postmarginal and stigmal veins long, the latter nearly parallel with the costal margin; abdomen shorter than the thorax, compressed........................**Chestomorpha** Ashmead (type *C. biformis* Ashmead).

16. Head always distinctly lenticular, the scrobes short, the punctures frequently large, thimble-like; hind wings with the costal cell usually extending to the hooklets................................ 17

Head not or less distinctly lenticular, smooth, shagreened, or finely closely punctate, rarely with a few large punctures scattered over the surface; if with large, coarse, thimble-like punctures, the antennæ are inserted on the middle of the face... 25

17. Marginal vein short or punctiform, *not* or scarcely longer than thick; mesonotum punctate........ 18

Marginal vein at least twice as long as thick, but usually much longer; mesonotum smooth, impunctate or finely rugulose.. 23

18. Mesonotum with the punctuation similar to that of the head................................ 19

Mesonotum with the punctuation unlike that of the head, the punctures less dense and the surface coriaceous.. 21

19. Scape normal, not dilated beneath, never with a leaf-like expansion, at the most clavate.......... 20

Scape strongly dilated beneath, or with a leaf-like expansion, the club much enlarged; as long as or longer than the funicle..............................**Ænasius** Walker (type *Æ. hyettus* Walk.).

20. Punctures on the head and thorax coarse and dense.

Mesonotum very short, only half the length of the scutellum; club of antennæ as long as all the funicle joints united; postmarginal vein as long as the stigmal vein...... **Chalcaspis** Howard (type *C. pergandei* How.).

Mesonotum at least as long as the scutellum; club of antennæ shorter than the funicle; postmarginal vein much shorter than the stigmal.......................**Bothriothorax** Ratzeburg (type *Encyrtus clavicornis* Dalm.).

Punctures on the head and the thorax smaller and less dense; mesonotum a little longer than the scutellum; funicle joints longer than thick.............**Aratus** Howard (type *A. scutellatus* How.).

21. Vertex very narrow or at least not very broad, and sparsely or very feebly punctate, never closely punctate.. 22

Vertex very broad, with a distinct thimble-like punctuation.

Club of the antennæ shorter than the funicle; postmarginal and stigmal veins short, subequal. **Pentelicus** Howard (type *P. aldrichii* How.).

Club of the antennæ very large, longer than the funicle and the pedicel united; postmarginal and the stigmal veins very long, the latter the shorter...................**Blepyrus** Howard (type *B. mexicanus* How.).

22. Vertex not very narrow, very sparsely and feebly punctate; eyes not especially large, nor nearly occupying the whole sides of the head; scrobes rather deep; scape slightly dilated beneath towards apex, the flagellum subclavate, ringed with white, the club scarcely thicker than the funicle; ocelli in an obtuse triangle, the lateral farther apart than to the front ocellus; wings hyaline, subfuliginous toward base, the marginal vein punctiform, the stigmal vein longer than the short postmarginal and the marginal united...........**Hemænasius** Ashmead (type *H. confusus* Ashm.).

Vertex and face very narrow, feebly punctate; eyes very large, occupying nearly the whole sides of the head and almost meeting on the vertex; front ocellus placed far in advance of the lateral ocelli, the latter close upon the eye margin; flagellum short, clavate, the pedicel large, obconic; first joint

of funicle, as well as the following, transverse; front wings with a large discal cloud beneath the stigmal and marginal veins, the postmarginal and the stigmal veins very long.
Euryrhopalus Howard (type *E. schwarzi* Howard).

23. Marginal vein short, rarely much more than twice longer than thick.......................... 24
Marginal vein rather long, rarely shorter than the stigmal vein.............................. 25

24. Head with some sparse thimble-like or umbilicate punctures; scutellum a little longer than the mesonotum; eyes pubescent.
Club of antennæ not longer than joints 1 and 2 of funicle united, the funicle joints all longer than wide; marginal vein scarcely as long as the stigmal vein, the postmarginal vein longer than the stigmal; abdomen conic-ovate, a little longer than the head and thorax united, with the ovipositor subexserted, dorsum subconcave; mandibles with the two outer teeth longer and more acute than the inner...........**Hemencyrtus** Ashmead (type *H. herbertii* Ashm.).
Club of antennæ very large and distinctly longer than the funicle, the funicle joints all very short, wider than long; abdomen depressed, oval, shorter than the thorax; mandibles with small, subequal teeth.................**Coccophoctonus** Ashmead (type *C. dactylopii* Ashm.).

25. Wings embrowned, the costal cell in hind wings narrow and short; mesonotum scarcely as long as the scutellum, finely shagreened, with sparse punctures; eyes large, bare; flagellum ringed with white; pedicel obconical, only a little longer than thick, the following joints gradually shortening, the last three funicle joints being not longer than wide...**Phænodiscus** Förster (type *Encyrtus æneus* Dalm.).
Wings hyaline, the costal cell in hind wings long and narrow; mesonotum scarcely as long as the scutellum, finely transversely rugulose or shagreened, especially anteriorly; eyes pubescent; flagellum subclavate, not ringed with white; pedicel very long, three times as long as thick, the funicle joints, except the first, wider than long........**Rhytidothorax** Ashmead (type *R. marlatti* Ashm.).

26. Antennæ inserted on or a little above the middle of the face.................................... 27
Antennæ inserted near the mouth border or very far below the middle of the face............... 28

27. Frons convex, somewhat coarsely and closely punctate; scape not extending beyond the ocelli; mesothorax rather coarsely shagreened; front wings with the marginal, stigmal and postmarginal veins long, subequal..............................**Tanaoneura** Howard (type *T. ashmeadii* Howard).
Frons highly convex but smooth; scape very long, extending far beyond the ocelli; mesonotum smooth, polished; front wings fasciate or maculate, the marginal vein short, the postmarginal and stigmal veins much longer.......................**Hexacladia** Ashmead (type *H. smithii* Howard).

28. Antennæ with the funicle 6-jointed... 29
Antennæ with the funicle 3, 4- or 5-jointed.. 58

29. Metathorax with the pleura and the lateral ridges always clothed with a dense, silvery-white pubescence; body rather robust.. 30
Metathorax bare, or with the lateral ridges superiorly alone pilose............................. 34

30. Antennæ similar in both sexes, the club strongly obliquely acuminate, conical, often white; front wings most frequently with a fuscous cloud or maculate; scape cylindrical, not at all dilated 31
Antennæ dissimilar in the sexes, the club not thicker than the funicle; marginal and postmarginal veins not very short, the former usually, but not always, a little the longer..................... 32

31. Marginal vein not punctiform, the stigmal and postmarginal veins rather long, at least twice longer than the marginal...........................**Homalotylus** Mayr (type *Encyrtus flaminius* Dalm.).
Marginal vein punctiform or nearly; the stigmal vein very long, curved; the postmarginal vein entirely wanting.................................. **Isodromus** Howard (type *I. iceryæ* Howard).

32. Thorax *without* a white lunula before the tegulæ; ovipositor not exserted, or if exserted very slender 33

Thorax *with* a white lunula before the tegulæ, rarely without ; ovipositor strongly exserted, thick and compressed, the sheaths broad ; abdomen rather long, as seen from above conic-ovate.
Cerchysius Westwood (type *Encyrtus subplanus* Dalm.).

33. Frons rather narrow, the eyes large, converging above, the lateral ocelli lying close to the eye margin ; abdomen oval or ovate, the ovipositor not exserted ; thorax not closely or deeply punctate ; hind wings with the costal cell short and narrow...... .**Sceptrophorus** Förster (type *S. sceptriger* Först.).

Frons not narrow, the eyes smaller and only slightly converging above, the lateral ocelli not close to the eye border, distant ; scrobes semicircular ; abdomen oval-rotund, the ovipositor exserted but very slender ; thorax short, closely punctate, or with large, deep punctures ; hind wings with the costal cell broad and extending to the hooklets........................ **Echthroplexis** Förster
(type *Cænocercus puncticollis* Thoms.).

34. Head as viewed from the side with the frons *not* prominent ; antennæ normal or at the most with only the scape compressed or dilated ; wings hyaline, rarely fuscous or subfuscous with whitish transverse or hyaline bands, the marginal vein rarely punctiform, but rarely longer than the stigmal vein, the postmarginal vein most frequently developed, rarely wanting or shorter than the marginal or stigmal veins.. 34

Head as viewed from the side with the frons prominent, the face inflexed ; antennæ frequently strongly compressed, dilated ; front wings usually fuscous or with fuscous rays, the marginal vein somewhat thick, oblong, very rarely much shorter or much longer than the stigmal vein, the postmarginal vein usually wanting ; ovipositor not or scarcely exserted 48

35. Marginal vein very short, punctiform, rarely longer than thick, the stigmal vein from two and one-half to three times longer than the marginal, the postmarginal vein wanting or short, only slightly developed, rarely well developed ; scape slender, or at most subclavate ; body metallic 36

Marginal vein *not* short, punctiform, although rarely longer than the stigmal vein, the postmarginal vein most frequently well developed, rarely somewhat shorter than the marginal or stigmal veins 38

36. Pedicel obconical, much stouter and longer than the first joint of the funicle, sometimes as long as joints 1 and 2 united ; frons rather narrow, the eyes as seen from in front somewhat convergent above ; club of antennæ not especially large, shorter than the funicle 37

Pedicel short, scarcely longer than thick ; frons moderate, the ocelli about their width from the eye margin ; club of antennæ large, the length of the funicle or nearly ; funicle joints short, submoniliform, the three or four terminal joints wider than long.................. .**Coccidencyrtus** Ashmead
(type *Encyrtus ensiger* How.).

37. Lateral ocelli close to or touching the eye margin ; postmarginal vein not or only slightly developed.

Eyes bare ; postmarginal vein not developed......................... **Ooencyrtus** Ashmead
(type *Encyrtus clisiocampæ* Ashm.).

Eyes pubescent ; postmarginal vein as long as the marginal....... .**Ageniaspis** Dahlbom (part).

Lateral ocelli not close to the eye margin, from one and a half to twice their width from it ; postmarginal vein somewhat developed. .... .**Psyllæphagus** Ashmead (type *Encyrtus pachypsyllæ* How.).

38. Species *not* metallic ; head and thorax opaque or subopaque, alutaceous, or closely microscopically punctate, or shagreened and punctate.. 39

Species metallic or submetallic 40

39. Postmarginal vein present.

First joint of the funicle shorter than the pedicel, all the funicle joints being short ; marginal vein punctiform......................... .**Aphycus** Mayr (type *Encyrtus apicalis* Mayr).

First joint of the funicle much longer than the pedicel, cylindrical, the following gradually shortening, but the last is still a little longer than thick........... **Heterarthrellus** Howard (type *H. australiensis* How.).

Postmarginal vein wanting; joints increase in width, but they are not longer than wide.

Astymachus Howard (type *A. japonica* How.).

40. Thorax *without* a scaly pubescence, and without white lunulæ before the tegulæ.................. 41

Thorax *with* a scaly pubescence, and *with* white lunulæ before the tegulæ.

Scape more or less dilated beneath, especially towards the apex, rarely simple, the flagellum ringed with white; wings hyaline, the stigmal and postmarginal veins subequal, longer than the marginal......................... **Blastothrix** Mayr (type *Encyrtus sericeus* Dalm.).

41. Scape normal, not expanded or dilated beneath, at the most subclavate; wings hyaline.......... 42

Scape dilated or expanded beneath, the club not especially enlarged, shorter than the funicle, the latter usually ringed with white, the first four joints of same longer than wide; front wings usually with fuscous bands, or fuscous with hyaline bands or markings............ **Microterys** Thomson (type *Encyrtus sylvius* Dalm.).

42. Thorax finely coriaceous, subopaque, *without* punctures scattered over the surface; frons punctate; postmarginal vein longer than the stigmal.. 43

Thorax smooth, impunctate, or at the most microscopically reticulate, or with fine longitudinal striæ on the mesonotum.. 44

43. Scape subclavate, the funicle 6-jointed, the joints wider than long, the club not thicker than the funicle; front wings hyaline with an oblique hairless line from the marginal vein; stigmal and postmarginal veins longer than the marginal; scutellum with a delicate median grooved line at base.

Holcencyrtus Ashmead (type *Aphycus niger* Ashmead.).

44. Mesonotum smooth, impunctate, or at the most microscopically reticulate...................... 45

Mesonotum with fine longitudinal striæ.

Stigmal vein scarcely longer than the marginal, the postmarginal longer than the marginal and the stigmal veins united; eyes pubescent; funicle joints 2–4 not longer than thick.

Ageniaspis Dahlbom (type *Encyrtus fuscicollis* Dalm.).

45. Stigmal vein very short, not or scarcely so long as the marginal and postmarginal veins united; axillæ either meet at their inner basal angles or they are separated................................ 47

Stigmal vein much longer than the marginal, as long or longer than the marginal and postmarginal veins united; the axillæ do not meet at their inner basal angle............................ 46

46. Lateral ocelli not close to the eye border; club of antennæ not much enlarged, only about half the length of the funicle, the joints of the funicle cylindrical, much longer than wide, never moniliform; abdomen conic-ovate, usually a little longer than the head and thorax united.

Pseudencyrtus Ashmead (type *Encyrtus cecidomyiæ* How.).

Lateral ocelli close to the eye border; club of antennæ not one third the length of the funicle, the joints of the funicle gradually thickening to the club, wide, joints 1 to 5 a little longer than thick, the sixth quadrate; abdomen short-ovate, shorter than the thorax.

Tachardiæphagus Ashmead, gen. nov. (type *T. thoracicus* Ashm.).

47. Stigmal vein not longer than the marginal and postmarginal veins united, usually distinctly shorter than the marginal.

Postmarginal vein longer than the stigmal.

Club of antennæ short, not one third the length of the funicle, funicle joints 1 to 4 shortening, not longer than thick; axillæ meet at base of scutellum; head sublenticular-with some sparse punctures, the lateral ocelli away from the eye border; abdomen ovate, flat above, not longer than the thorax..... **Tachinæphagus** Ashmead, gen. nov. (type *T. zealandicus* Ashm.).

Postmarginal very short, or shorter than the stigmal.

Club of the antennæ much enlarged, usually as long or nearly as long as the funicle, or a little longer, and obliquely truncate from beneath, the joints of the funicle, or at least the first three or four joints, moniliform, or not longer than thick, the others transverse; abdomen ovate, rarely longer than the head and thorax united, most frequently the length of the thorax or a little longer.......................... **Epiencyrtus** Ashmead (type *Encyrtus thyrcodontis* Ashm.).

Club of antennæ not much enlarged, nor obliquely truncate from beneath, fusiform, and less than half the length of the funicle, none of the funicle joints wider than long; abdomen short ovate, hardly as long as the thorax........... **Syrphophagus** Ashmead (type *Encyrtus mesograptæ* Ashm.).

Stigmal vein very short, scarcely so long as the marginal and postmarginal veins united, the former being not more than, or hardly, twice as long as thick, the postmarginal vein never well developed, although acuminate and longer than the short marginal; club of antennæ oblong, stouter, and a little more than half the length of the funicle, the first two or three joints of the funicle short or moniliform, the following a little longer than thick, or at most with only the last two joints a little wider than long; abdomen broadly oval and considerably shorter than the thorax; scutellum variable, subopaquely sculptured or polished, impunctate, the axillæ not quite meeting at their inner basal angles...................... **Aphidencyrtus** Ashmead (type *Encyrtus aphidiphagus* Ashm.).

48. Winged.. 49

Apterous.

Scutellum triangular, acute at apex, not declivous; head with the scrobes deep; antennæ simple..................................**Choreia** Westwood (type *Encyrtus ineptus* Dalm.).

49. Head with the face much inflexed, the scrobes deep, semicircular, the frons most frequently regularly or very minutely, feebly punctate.. 50

Head always semiglobose, the face less distinctly inflexed, the scrobes, however, always forming a semicircle; antennæ simple, or at least never much compressed, nor very broad, subcylindrical; wings not fusco-radiate; scutellum with a clump of hairs at apex.......... **Cheiloneurus** Westwood (type *C. formosus* Westw.).

50. Wings fuscous, usually with the extreme tips white or hyaline................................. 52

Wings not so colored.

Wings with fuscous rays, or with leopard-like spots.. 51

Wings hyaline or at most with a discoidal cloud; antennæ short.

Eyes large, rounded, strongly convergent above and leaving a very narrow or linear vertex; antennæ very short, the club enormously enlarged, longer than the funicle and several times thicker, the joints of the funicle transverse....... **Zaomma** Ashmead (type *Encyrtus argentipes* How.).

Eyes not unusually large, only slightly converging above, the vertex not especially narrow; club of antennæ not unusually enlarged and about the length of the funicle, the joints of the funicle transverse, the first two or three submoniliform.

Adelencyrtus Ashmead (type *Encyrtus chionaspidis* How.).

51. Wings with leopard-like spots; antennæ very long and slender, longer than the body, the club enlarged............................... **Callipteroma** Motschulsky (type *C. 5-signatus* Motsch.).

Wings with fuscous rays.

Head oblong; antennæ strongly compressed, broad; occipital margin and the scutellum normal. **Cerapterocerus** Westwood (type *C. mirabilis* Westw.).

Head *not* oblong; antennæ neither strongly compressed nor broad; occipital margin medially and superiorly, with two strong clavate hairs; scutellum at apex with one or two clumps of hairs; marginal vein more than twice as long as thick.

Funicle 6-jointed, the joints wider than long, the club not especially large. **Habrolepis** Förster (type *Encyrtus dalmani* Westw.).

Funicle 4-jointed, the joints fully twice as long as thick, or a little longer, the club very large, fusiform, nearly as long as the funicle and much stouter. **Homalopoda** Howard (type *H. cristata* How.).

52. Marginal vein shorter than the stigmal or no longer.. 55

Marginal vein longer than the stigmal; facial impression not bounded by a distinct arched carina superiorly.. 53

53. Scutellum *without* a tuft of black bristles near apex.. 54

Scutellum *with* a tuft of black bristles near apex.

Head with a series of moderately large punctures; axillæ very narrow, transversely wedge-shaped, with the points just meeting at base of the scutellum; antennæ compressed, the scape wide..........................**Eusemion** Dahlbom (type *Encyrtus corniger* Haliday).

Head microscopically punctate; axillæ with their points not quite meeting; antennæ strongly clavate, subcompressed, the scape subclavate, the club very large, many times larger than the funicle, the joints of the latter transverse, linear...........**Blatticida** Ashmead, g. nov. (type *B. pulchra* Ashm.).

54. Head smooth, shining, with very fine, sparse punctures; ocelli in an acute triangle; axillæ united at base of the scutellum..............................**Atropates** Howard (type *A. collinsi* How.).

55. Facial impression not bounded by an arched carina superiorly................................ 57

Facial impression and scrobes deep, bounded by a distinct arched carina superiorly.

Scutellum *without* a tuft of bristles.. 56

Scutellum *with* a tuft of bristles.

Stigmal and postmarginal veins very long.................**Chrysoplatycerus** Ashmead (type *Rileya splendens* How.).

56. Marginal and postmarginal veins subequal, the stigmal a little the longer; eyes naked; ocelli in an acute triangle; funicle not longer than the first joint of the club............. **Asteropæus** Howard (type *A. primus* How.).

Marginal longer, the stigmal and postmarginal veins not long; eyes pubescent; joints of the funicle all short and rapidly widening from the narrow pedicel, the club longer than the funicle, obliquely truncate from beneath towards apex; tarsi short and somewhat thickened....... **Anicetus** Howard (type *A. ceylonensis* How.).

57. Scutellum normal; eyes pubescent; antennæ short, the scape somewhat broadly dilated toward apex; the flagellum strongly incrassated, scarcely longer than the scape, the very large club longer than the funicle, the joints of funicle annular; marginal vein punctiform, the stigmal and postmarginal veins very long as in *Encyrtus*..................... **Zarhopalus** Ashmead (type *Z. sheldoni* Ashm.).

58. Antennæ 10-jointed, the funicle 5-jointed.

Scape linear, wholly received in the scrobes; marginal vein punctiform...... **Metallon** Walker (type *M. acacallis* Walk.).

Antennæ 9-jointed, the funicle 4-jointed .... **Cercobelus** Walker (type *C. jugæus* Walk.).

Antennæ 6-jointed, the funicle 3-jointed..................... **Coccobius** Ratzeburg (type unknown.)

59. Mandibles with the teeth shorter, less acute; labrum not conspicuous; frons punctate and frequently with a series of large, thimble-like punctures; wings often ornate, sometimes wanting or abbreviated 65

Mandibles rather long, with acute teeth, the apical one usually larger and more acute than the other two; labrum conspicuous; frons very closely punctate or shagreened, the large punctures wanting; front wings not ornate, usually with a punctiform or very short marginal vein, the hind wings usually with a long costal cell, which extends to the hooklets; head, as seen from in front, rather narrow and long, subtriangular, the scrobes forming a triangle.

Postmarginal vein wanting or hardly developed, the marginal vein very short, punctiform. 60

Postmarginal vein distinct, longer than the stigmal vein................................ 64

60. Head, viewed from in front, much longer than wide, the cheeks long 61

Head, viewed from in front, not longer than wide, the cheeks not long.......................... 63

61. Front wings *with* marginal cilia... 62

Front wings *without* marginal cilia.

Antennæ very long and slender, the flagellar joints all very long, the sixth the shortest, but five times as long as wide.. **Psilophrys** Mayr.

62. Pedicel three or more times longer than thick at apex, the flagellum with long hairs.

Funicle joints about four times as long as thick, cylindrical; mesonotum and scutellum shagreened .... **Parapsilophrys** Howard.

Funicle joints less than thrice as long as thick; mesonotum reticulate........ **Liothorax** Mayr.

Pedicel not three times as long as thick, the flagellum clothed with long hairs.

Copidosoma Ratzeburg.

63. Cheeks about half the length of the eyes; funicle joints 1–5 triangularly toothed, with long hairs.

Prionomitus Mayr.

Cheeks very short; eyes large, rounded, pubescent; pedicel thrice as long as thick.

Archinus Howard.

64. Mesonotum lustrous, smooth, blue or metallic.

Pedicel about thrice as long as thick, the flagellum filiform or subfiliform, with a short, sparse pubescence, the funicle joint from two and a half to three times as long as thick; the first joint very long, four or more times longer than thick; eyes pubescent; postmarginal vein very long...... .... **Parencyrtus** Ashmead.

65. Abdomen with the dorsum flat or concave, not rigidly pubescent.............................. 66

Abdomen subglobose or subovate, clothed with a rigid white pubescence.

Pronotum large, conical; antennæ strongly compressed, broad; wings wanting or poorly deoped, not extending to middle of abdomen.............................. **Mira** Schellenberg.

Pronotum not large; antennæ simple, neither compressed nor broad.

Head, seen from in front, much longer than wide; marginal vein not short; antennæ long, the flagellum subclavate, clothed with a soft, dense pubescence. **Sphæropisthus** Thomson.

Head, seen from in front, not longer than wide; marginal vein very short, the postmarginal vein longer than the stigmal; flagellum filiform, the joints nearly thrice as long as thick.

Chestomorpha Ashmead.

66. Head not or less distinctly lenticular, opaque, minutely, closely punctate, shagreened, or smooth and shining, at the most with only a few large punctures.. 70

Head transversely broad, always lenticular, the scrobes short, the punctures large, thimble-like; hind wings with the costal cell usually extending to the hooklets.

Marginal vein rarely short, at least longer than thick, and usually much longer; mesonotum smooth, impunctate, or at most shagreened.. 68

Marginal vein very short, punctiform, not or scarcely longer than thick; mesonotum punctate.

Mesonotum with the punctuation unlike that of the head, the punctures less dense and the surface finely coriaceous; postmarginal and stigmal veins short, subequal...... 67

Mesonotum with the punctuation similar to that of the head; postmarginal vein very short or subobsolete (rarely long), the stigmal vein long.

Scape normal, *without* a leaf-like expansion beneath.

Punctures on head and thorax coarse and dense.

Mesonotum very short, only about half the length of the scutellum; postmarginal vein usually as long as the stigmal; flagellum long, with long sparse hairs, not arranged in half whorls.........**Chalcaspis** Howard.

Mesonotum at least as long as the scutellum or very nearly; postmarginal vein much shorter than the stigmal; flagellum with funicle joints subexcised at apex, with half whorls of long hairs.

Bothriothorax Ratzeburg.

Punctures on head and thorax small and less dense; mesonotum a little longer than the scutellum............................**Aratus** Howard.

67. Vertex and face broad, finely shagreened, and sparsely punctate; scrobes deep, semicircular.

Pedicel obconical, longer than thick at apex, the flagellum subclavate, the joints, after the first, wider than long...**Pentelicus** Howard.

Pedicel very minute, the flagellum filiform, pilose, the joints subequate, about two and one half times as long as thick..**Blepyrus** Howard.

Vertex and face very narrow, or not broad.

Head with coarse thimble-like punctures, the thorax smooth, impunctate; flagellum short, thick, filiform, clothed with a dense short pubescence, the joints wider than long.

Ænasius Walker.

Head smooth without coarse thimble-like punctures, at the most with some sparse punctures on the vertex; flagellum long, subclavate, not thick and only sparsely pubescent.

Euryrhopalus Howard.

68. Marginal vein rather long, rarely shorter than the stigmal.................................... 69

Marginal vein rarely more than twice as long as thick; head with rather sparse, scattered, umbilicate punctures, the scutellum a little longer than the mesonotum.

Head not wider than the thorax between the wings; flagellum not short, filiform, and clothed with rather short sparse hairs, the funicle joints longer than wide, the first a little the longest.

Hemencyrtus Ashmead.

Head wider than the thorax between the wings; flagellum short, strongly clavate, as in the female; the club large and longer than the funicle, the joints of the latter minute, annular.

Coccophoctonus Ashmead.

69. Mesonotum as long as the scutellum or nearly, rarely somewhat shorter, the surface finely shagreened, at most with some feebly defined sparse punctures; marginal vein shorter than the stigmal, the latter not very short; flagellum filiform, pilose, the funicle joints about twice as long as thick; eyes bare..**Phænodiscus** Förster.

Mesonotum much shorter than the scutellum, finely delicately shagreened or rugulose, especially anteriorly; marginal vein a little longer than the stigmal; flagellum subclavate, densely pubescent, the funicle joints 2–6 not longer than thick, if anything a little wider than long; eyes pubescent. **Rhytidothorax** Ashmead.

70. Antennæ inserted near the mouth border or far below the middle of the face 71

Antennæ inserted on or a little above the middle of the face.

Frons subconvex, somewhat coarsely and closely punctate; thorax rather coarsely shagreened or finely rugulose; scape not extending beyond ocelli; front wings with the marginal, postmarginal and stigmal veins long, subequal .... **Tanaoneura** Howard.

Frons highly convex, smooth and polished, as is also the thorax; scape long, extending far beyond the ocelli; front wings with the marginal, postmarginal and stigmal veins rather short, the marginal thickened with a fuscous cloud or band beneath; flagellum with six long branches.. **Hexacladia** Ashmead.

71. Antennæ with the funicle 2-, 3-, 4- or 5-jointed.. 89

Antennæ with the funicle 6-jointed (in a single case 2 jointed).

Metathorax bare, or with the lateral ridges superiorly alone pilose. 75

Metathorax with the pleura and the lateral ridges always clothed with a dense silvery pubescence; body rather robust.. 72

72. Antennæ unlike those of the female, filiform, pilose, or with whorls of hairs, or the funicle joints dentate or subpedunculate, with whorls or fascicles of hairs. 73

Antennæ similar to those of the female, filiform or at most subclavate, the club conical, strongly obliquely truncate from beneath, often white, the scape cylindrical, not at all dilated; front wings usually with a discoidal fuscous cloud or macula.

Marginal vein *not* punctiform, although short, the stigmal and postmarginal veins long, very much longer than the marginal.. **Homalotylus** Mayr.

Marginal vein punctiform, the stigmal vein long, the postmarginal vein not developed or wanting.. **Isodromus** Howard.

73. Marginal and postmarginal veins not very short, the former usually a little longer than the stigmal, rarely somewhat shorter.

Thorax without white lunulæ before the tegulæ.. 74

Thorax, with white lunulæ, or at least a dot, before the tegulæ......... **Cerchysius** Westwood.

74. Hind wings, with the costal cell short and narrow.

Antennæ long; the flagellum long, cylindrical, clothed with long, sparse hairs; the funicle joints long .... **Sceptrophorus** Förster.

Hind wings with the costal cell broad and extending as far as the hooklets.... **Echthroplexis** Förster.

75. Head with the frons prominent, the face inflexed; antennæ frequently compressed, dilated, broad; front wings usually with fuscous rays or fuscous with white tips, more rarely hyaline; sometimes apterous or subapterous; marginal vein usually somewhat thickened, oblong, very rarely much longer or much shorter than the stigmal, the postmarginal frequently wanting........................ 83

Head, as seen from the side, with the frons not prominent; wings most frequently hyaline, although sometimes with transverse fuscous bands or fuscous with white bands.

Marginal vein not short, punctiform, but rarely longer than the stigmal, always more than twice longer than thick, the postmarginal most frequently well developed, rarely somewhat shorter than the marginal 77

Marginal vein very short, punctiform, rarely longer than thick, the stigmal from two and a half to three times or more longer than the marginal; the postmarginal wanting or very short, not well developed, scape slender or at most subclavate, never dilated; frons usually rather narrow, the eyes, as seen from in front, slightly converging above.

Scape slender, or at most subclavate; frons rather narrow 76

Scape and flagellum abnormally compressed and broad, the funicle joints 1 to 4 wider than long ....**Mirocerus** Ashmead, n. g. (type *M. peyclæ* Ashm.).

76. Flagellum with the hairs on the funicle joints not arranged in half whorls.

Lateral ocelli touching the eye margin; flagellum with long hairs.

Eyes bare; postmarginal vein not developed or so slightly developed as not to be considered...**Oöencyrtus** Ashmead.

Eyes pubescent; postmarginal vein as long as the marginal..**Ageniaspis** Dahlbom (part).

Lateral ocelli not close to the eye margin; postmarginal vein somewhat developed; flagellum filiform, with a short pubescence.............................**Psyllæphagus** Ashmead.

Flagellum with the hairs on the funicle joints arranged in half whorls......**Coccidencyrtus** Ashmead.

77. Species metallic or submetallic 78

Species *not* metallic; head and thorax opaque or subopaque, alutaceous, closely microscopically punctate or shagreened, and pubescent.

Postmarginal vein present.

Pedical longer than the first joint of funicle; flagellum clothed with hairs, the funicle joints, except the first two or three joints, not or scarcely longer than thick.

Aphycus Mayr.

Pedicel very short; flagellum elongate, the club only slightly enlarged, the funicle joints elongate, cylindrical, and clothed with sparse, long hairs....**Heterarthrellus** Howard.

Postmarginal vein wanting.

Pedicel as long as the first funicle joint; flagellum subclavate, the club not quite so long as funicle joints 4–6 united, first joint of funicle the longest, the following gradually shortening, clothed with a short, rather dense pubescence......**Astymachus** Howard.

78. Thorax *without* a scaly pubescence, and *without* white lunulæ before the tegulæ.................. 79

Thorax *with* a scaly pubescence, and *with* white lunulæ before the tegulæ.

Flagellum elongate, the funicle joints long, excised or subexcised at apex with whorls of long hairs..**Blastothrix** Mayr.

79. Scape normal, not expanded or dilated beneath, at the most subclavate; wings hyaline 80

Scape usually dilated or expanded beneath, or at least with a carina, rarely simple, unlike the female; wings fuscous or subfuscous, with transverse hyaline bands, rarely hyaline.

Thorax smooth but microscopically coriaceous, with sparse punctures scattered over the surface; frons with a series of punctures, especially on the orbits...............**Microterys** Thomson.

80. Thorax finely coriaceous, subopaque, without punctures scattered over the surface; frons punctate; scutellum with a delicate impressed median line; wings pubescent, with an oblique hairless line from base of stigmal vein; flagellum subfiliform, clothed with a short, dense pubescence, the funicle joints a little wider than long..**Holcencyrtus** Ashmead.

Thorax smooth, impunctate, or at the most microscopically reticulate, or with fine longitudinal striæ on the mesonotum.

Mesonotum smooth, impunctate, or at the most microscopically reticulate.................. 81

Mesonotum with fine longitudinal striæ.

Stigmal vein scarcely longer than the marginal, the postmarginal vein longer than the marginal and stigmal veins united; eyes pubescent............**Ageniaspis** Dahlbom.

81. Stigmal vein very short, *not* or scarcely so long as the marginal and postmarginal veins united; axillæ meet at their inner basal angles. 82

Stigmal vein much longer than the marginal, as long or longer than the marginal and postmaginal veins united; axillæ do not quite meet at their inner basal angles.

Antennæ with the scape rather short and stout, not reaching to the front ocelli, the flagellum elongate filiform, clothed with sparse moderately long hairs, the funicle joints about thrice as long as thick, or nearly. . . . . **Pseudencyrtus** Ashmead.

Antennæ with the scape long, slender, reaching to or beyond the front ocellus, the flagellum elongate filiform, the funicle joints more than twice longer than wide, with long sparse hairs; scutellum shagreened or striate. . . . . **Microterys** Thomson (part).

82. Stigmal vein *not* longer than the marginal and postmarginal veins united, usually distinctly shorter, the postmarginal very short, or shorter than the stigmal. . . . . **Epiencyrtus** Ashmead.

Antennæ with the scape short, not extending beyond the middle of the face, the flagellum filiform, sparsely pilose, the funicle joints about two and a half times as long as thick; lateral ocelli about or nearly twice their width from the eye margin. . . . . . . **Syrphophagus** Ashmead.

Stigmal vein very short, not so long as the marginal and postmaginal united, the former being not more than or hardly twice as long as thick, the postmarginal never well developed, although acuminate and longer than the short marginal.

Flagellum filiform, pilose, the joints of funicle about twice as long as thick; lateral ocelli at least their width from eye margin. . . . . **Aphidencyrtus** Ashmead.

83. Scutellum neither triangular nor acute at apex. 84

Scutellum triangular, acute at apex.

Antennæ simple, subfiliform, pubescent. . . . . **Choreia** Westwood.

84. Funicle 6-jointed 85

Funicle 2-jointed, the club unusually long and cylindrical (teste Mayr). . . . . **Habrolepis** Förster.

85. Head with vertex antero-posteriorly broad, the face much inflexed, the frons regularly punctate; antennæ with the scape and flagellum usually strongly compressed, broad; wings fuscous or with fuscous rays. 86

Head always semiglobose, the face less distinctly inflexed, the scrobes always forming a semicircle; antennæ simple, filiform, the joints long, cylindrical, distinctly separated and hairy, rarely slightly compressed; wings usually fusco-radiate or partly fuscous, rarely entirely hyaline.

Scape elongate, extending to or beyond the front ocellus, the flagellum very long, clothed with rather long hairs. . . . . **Cheiloneurus** Westwood.

86. Wings fuscous, with narrow white tips. 87

Wings hyaline, the marginal vein rather long, stout, as long as the stigmal vein, the latter not short, the postmarginal not developed; antennæ long, filiform, the flagellum with sparse moderately long hairs; funicle joints 1–6 constricted at apex or subpedunculate, somewhat similar to the male in *Eurytoma* . . . . **Cerapterocerus** Westwood.

87. Marginal vein shorter than the stigmal. 88

Marginal vein longer than the stigmal.

Facial impression not bounded by a distinct carina superiorly . . . . **Eusemion** Dahlbom.

88. Facial impression and scrobes deep, bounded by a high carina superiorly.

Scutellum with a tuft of bristles; stigmal and postmarginal veins very long.
Chrysoplatycerus Ashmead.

Scutellum *without* a tuft of bristles; stigmal and postmarginal veins not long. **Anicetus** Howard.

Facial impression not bounded by a carina superiorly . . . . **Zarhopalus** Ashmead.

89. Antennæ 10-jointed, with a 5-jointed funicle.......................................**Metallon** Walker.
Antennæ 9 jointed, the funicle 4-jointed.......................................**Corcobelus** Walker.
Antennæ 6-jointed, the funicle 3-jointed.......................................**Coccobius** Ratzeburg.
Antennæ 5-jointed, the funicle 2-jointed, the club unusually long and cylindrical....**Habrolepis** Förster.

Tribe IV. *Arrhenophagini.*

In this tribe the mandibles are acutely pointed, or conical, and edentate; tarsi 4 or 5-jointed, while the marginal vein, in the front wings, is wanting or punctiform, the postmarginal vein being absent. The stigmal vein is sometimes present.

TABLE OF GENERA.

1. Tarsi 4-jointed... 2
Tarsi 5-jointed.
Front wings with the marginal vein punctiform, the postmarginal wanting, the stigmal vein rather short and curved; ♀ with 10-jointed antennæ, the funicle 5-jointed, joints 1–3 small, wider than long; ovipositor exserted........**Rhopoideus** Howard (type *R. citrinus* How.).
2. Front wings with the marginal and stigmal veins wanting, the subcostal vein not quite attaining the costal edge and ending in a stigma; ♀ with 3-jointed antennæ, ♂ with 9-jointed antennæ.
Arrhenophagus Aurivillius (type *A. chionaspidis* Auriv.).

Subfamily III. Signiphorinæ.

1894. Signiphorinæ, Subfamily, Howard, Ins. Life, VI., p. 234.

1897. Signiphorinæ, Subfamily III., Ashmead, Proc. Ent. Soc. Washington, IV., p. 248.

This subfamily was established by Dr. L. O. Howard, in 1894, and was based upon my genus *Signiphora*, described in 1880, from specimens bred in Florida from the purple scale, *Aspidiotus citricola* Packard. Many species have since been discovered from different parts of the world, and the group, although at present represented by a single genus, has evidently a wide distribution. The species destroy scale insects, *Coccidæ*, and the mealy-winged flies, *Aleurodidæ*.

Antennæ apparently 3-jointed but in reality 6-jointed, there being 3 minute ring-joints easily overlooked; wings with a long marginal fringe, the marginal vein long, about the length of the subcostal vein, the stigmal vein distinct but not long, the postmarginal vein absent; middle tibiæ with a large, lobed apical spur, and with lateral spurs or strong bristles.
Signiphora Ashmead (type *S. flavopalliata* Ashm.).

Family LXIX. PTEROMALIDÆ.

1835. Pteromalidæ, Family (partim), Walker, Ent. Mag., II., p. 286.

1840. Pteromalides, Subfamily 3 (partim), Westwood, Intro. Mod. Class. Insect, II., p. 166; Synop., p. 67.

1846. Spalangiidæ, Family 7 (partim), Walker, List. Chalc. Brit. Museum, I., p. 23.

1846. Pteromalidæ, Family 8 (partim), Walker, *opus cit.*, p. 23.

1856. Ormoceroidæ, Family XV. (partim), Förster, Hym. Stud., II., p. 59.

1856. Pteromaloidæ, Familie 16 (partim), Förster, *opus cit.*, pp. 19, 25 and 63.

1875. Pteromalina Tribus (partim), Thomson, Hym. Skand., IV., pp. 12 and 217.

1886. Pteromalinæ, Subfamily (partim), Howard, Ent. Amer., I., p. 198.

1897. Pteromalidæ, Family LXIX., Ashmead, Proc. Ent. Soc. Washington, IV., p. 246.

This is the largest and most difficult family to classify of all of the families of the superfamily Chalcidoidea. It comes nearest to the family *Miscogasteridæ*, and is separated from it by a single character — the tibial spurs of the hind legs. In this family the hind tibiæ have *one* apical spur, in the *Miscogasteridæ two.*

Six subfamilies have been recognized, and these are again divided into tribes. The subfamilies may be recognized by the aid of the following table:

TABLE OF SUBFAMILIES.

1. Abdomen sessile or subsessile.......... 2

Abdomen distinctly petiolate.......... 4

2. Metanotum *without* spiracular sulci and usually without lateral folds.......... 3

Metanotum *with* spiracular sulci, always present, the lateral folds also present although sometimes incomplete, the median carina usually more or less distinct, rarely absent; antennæ 12 to 13-jointed. Subfamily I. PTEROMALINÆ.

3. Head normal, not especially wide; antennæ 12 to 13-jointed; scutellum of normal size; hind angles of metanotum rounded..........Subfamily II. MERISINÆ.

Head very wide, much wider than the thorax, lenticular; antennæ 6 to 10-jointed, inserted near the mouth border; scutellum large; hind angles of metanotum acute.......Subfamily III. EUNOTINÆ.

4. Front wings with the marginal vein very long, the costal cell very narrow; head transverse, convex anteriorly.......... 6

Front wings with the marginal vein not especially long, often short and thick, the costal cell rarely narrow; if very narrow the head is oblong; apterous forms not uncommon.......... 5

5. Head viewed from in front short or rounded, the occipital line incomplete; antennæ 9 to 13-jointed. Subfamily IV. SPHEGIGASTERINÆ.

Head viewed from in front oblong, the occipital line complete; antennæ 8 to 12-jointed. Subfamily V. SPALANGIINÆ.

6. Mesonotum rather long; head in front convex; antennæ 13-jointed, the scape long, reaching beyond the ocelli..........Subfamily VI. DIPARINÆ.

SUBFAMILY I. PTEROMALINÆ.

1897. Pteromalinæ, Subfamily II., Ashmead, Proc. Ent. Soc. Washington, IV., p. 236.

1900. Pteromalinæ, Subfamily II., Ashmead, Proc. U. S. Nat. Museum, XXIII., p. 248.

The *sessile*, not distinctly petiolate, abdomen separates this group from the *Sphegigasterinæ*, *Spalangiinæ* and the *Diparinæ*, while the shape of the head, scutellum, metathorax and the greater number of joints in the antennæ readily separate it from the *Eunotina*.

Large subfamilies, I think, should be separated into tribes, in order to facilitate quicker the recognition of genera and to show better their affinities.

I have, therefore, recognized *four* tribes, based upon the number of teeth in the mandibles.

TABLE OF TRIBES.

1. Both mandibles *not* 3-dentate 2
Both mandibles 3-dentate .... Tribe I. Metaponini.
2. Left mandible 3-dentate, the right 4-dentate.
Antennæ inserted on or near the middle of the face, always above an imaginary line drawn from the base of the eyes .... Tribe II. Raphitelini.
Antennæ inserted far below the middle of the face, on or below an imaginary line drawn from the base of the eyes .... Tribe III. Eutelini.
Both mandibles 4-dentate .... Tribe IV. Pteromalini.

TRIBE I. *Metaponini.*

The three dentate mandibles distinguish the tribe. All of the species, so far as the records go, with a single exception, are parasites of coleopterous larvæ.

TABLE OF GENERA.

1. Females 2
Males 11
2. Head triangular, narrowed towards the mouth, eyes large, rounded, convex; presternum large, mesosternal furrow distinct; metathoracic spiracles rounded, remote from the postscutellum 3
Head not triangular, viewed from in front, more rounded, very slightly wider than long; eyes oblong-oval or oval; presternum not large; mesosternal furrow not distinct; vertex broad; metathoracic spiracles not rounded 5
3. Vertex not acute medially 4
Vertex broad, acute medially, the frons impressed.
Abdomen conically pointed .... **Etroxys** Westwood (*E. scenicus* Westw.).
4. First joint of funicle large, fully twice as long as thick.
Holcæus Thomson (type *Etroxys dichrous* Dalm.).
First joint of funicle small, not or hardly 1½ times as long as thick.
Cricellius Thomson (type *C. decipiens* Thoms.).
5. Club of antennæ not white 6
Club of antennæ white or yellowish.
Metathorax short, with a small subglobose neck, punctate, the spiracles small, rounded; head transverse, wider than the thorax; antennæ inserted near the middle of the face, the flagellum subfiliform, the first joint of the funicle the largest.
Chrysoglyphe Ashmead (type *C. apicalis* Ashm.).
6. Antennæ much thickened toward apex, clavate 10
Antennæ not much thickened toward apex, filiform or at most subclavate 7

7. Hind coxæ not small, the posterior margin at base hairy; abdomen not rotund.................... 8

Hind coxæ small, subovate, the posterior margin at base not hairy; abdomen rotund; head large, wider than the thorax........................**Dirhicnus** Thomson (type *D. subcœruleus* Thoms.).

8. Antennæ with *three* ring-joints.. 9

Antennæ with *two* ring-joints.

Collar not distinctly separated; flagellum filiform, the pedicel obconical, shorter than the first joint of the funicle; metathorax not short, punctate, with a median carina, the spiracles oval; abdomen elongate, longer than the thorax ....**Stinoplus** Thomson (type *E. militaris* Thoms.).

Collar narrowed medially; flagellum filiform, the pedicel small, a little longer than thick; metathorax without a median carina, the spiracle oval; abdomen elongate, pointed toward apex, and longer than the head and thorax.........**Spintherus** Thomson (type *S. obscurus* Thoms.).

9 Pronotum as wide as the mesonotum, distinctly separated, and with the anterior margin acute; metathorax short, punctate, with a small globose neck and without a median or transverse carina, the spiracles subreniform; flagellum subfiliform, hardly thickened towards apex; abdomen ovate, hardly longer than the thorax; marginal vein not longer than the stigmal vein.

Bruchobius Ashmead, g. nov. (type *B. laticeps* Ashm.).

Pronotum narrower than the mesonotum, the anterior margin not acute; metathorax with a subglobose neck, punctate, and with usually median and transverse carinæ or at least with one or the other present, the spiracles oval or ellipsoidal, *not* reniform; flagellum filiform or subfiliform.

Metanotum with a transverse carina near the base, the median carina wholly absent; marginal vein long, a little more than twice the length of the stigmal vein.

Lophocomodia Ashmead (type *L. americana* Ashm.).

Metanotum with transverse and median carinæ present; marginal vein not long, not or hardly longer than the stigmal vein...**Psilocera** Walker.

= *Eupsilocera* Westwood = *Dichalysis* Förster (type *P. obscura* Walk.).

10. Flagellum with *three* ring-joints; scutellum normal; metathorax with the median and transverse carinæ usually present although sometimes the transverse fold is vaguely defined or absent, the spiracle oval; abdomen subcompressed beneath toward apex, the hypopygium prominent.

Metapon Walker (type *M. atrum* Walker).

Flagellum with *two* ring-joints; scutellum hardly elevated and produced into a blunt conical spine posteriorly; metathorax with median and transverse carinæ present, the spiracles large, elongate oval; abdomen compressed, the hypopygium prominent, plowshare-shaped.

Acanthometapon Ashmead, g. nov. (type *A. clavicornis* Ashm.).

11. Head triangular, narrowed towards the mouth; eyes large, rounded, or oblong-oval, convex; presternum large; mesosternal furrows distinct; metathoracic spiracles rounded, remote from the postscutellum.. 12

Head not triangular, viewed from in front more rounded, usually very slightly wider than long; eyes oblong-oval or oval; presternum not large; mesosternal furrow not distinct; vertex broad; metathoracic spiracles *not* rounded.. 14

12. Vertex not acute medially.. 13

Vertex broad, acute medially; antennæ long, the flagellum filiform, the funicle joints long.

Etroxys Westwood.

13. Antennæ subclavate; metathoracic spiracles small, round........................**Holcæus** Thomson.

Antennæ filiform; metathoracic spiracles oval, or not round....................**Cricellius** Thomson.

14. Tip of antennæ not white.. 15

Tip of antennæ white..**Chrysoglyphe** Ashmead.

15. Hind coxæ not small, the hind margin towards base hairy 16

Hind coxæ small, the hind margin not hairy .... **Dirhienus** Thomson.

16. Antennæ with *two* ring-joints 17

Antennæ with *three* ring-joints 18

17. Scutellum posteriorly highly elevated and produced into a spine .... **Acanthometapon** Ashmead

Scutellum normal, not spined.

Collar not distinctly separated .... **Stinoplus** Thomson.

Collar narrowed medially .... **Spintherus** Thomson.

18. Pronotum not broad, narrower than the mesonotum 19

Pronotum broad, as wide as the mesonotum .... **Bruchobius** Ashmead.

19. Flagellum filiform, the joints cylindrical, those of the funicle very briefly pedicellate, hairy but not verticillate 20

Flagellum filiform, the joints of the funicle nodose-verticillate.

Metanotum without a median carina; marginal vein more than twice the length of the stigmal vein .... **Lophocomodia** Ashmead.

Metanotum with a median carina; marginal vein not or only a little longer than the stigmal vein .... **Psilocera** Walker.

20. Metathorax with the median and transverse carinæ usually present, the spiracles oval.

Metapon Walker.

TRIBE II. *Rhaphitelini.*

In this tribe the left mandible is 3-dentate, the right 4-dentate, as in the tribe *Eutelini*, from which it is, however, easily distinguished by the insertion of the antennæ; these are inserted on or near the middle of the face, and *not* low down, near the mouth border, as in the *Eutelini*.

TABLE OF GENERA.

1. Females 2

Males 14

2. Front femora considerably swollen 3

Front femora normal.

3. Metathorax with a median carina and with the lateral folds complete, rarely abbreviated, the spiracles small, rounded or broadly oval, and lying close to the postscutellar fold.

Marginal vein in front wings *thickened* 4

Marginal vein in front wings normal, *slender* 7

4. Antennæ with ring-joints *small*, transverse or annular 5

Antennæ with the ring-joints *large*, not transverse.

Front coxæ cylindrical; knob of stigmal club obsolete .... **Pandelus** Förster
(type *Cleonymus flavipes* Först.).

5. Metanotum *with* folds and a median carina 6

Metanotum smooth, *without* folds.

Stigmal and postmarginal veins short; abdomen conic-ovate, keeled beneath; last joint of antennæ normal .... **Metacolus** Förster (type *M. unifasciatus* Först.).

6. Stigmal vein longer than the marginal; last joint of the antennæ stylate; abdomen ovate, depressed, not keeled beneath .... **Rhaphiteles** Walker (type *R. maculatus* Walk.).

7. Stigmal club, or knob, small; front margin of pronotum rounded; metanotum with a median carina, the lateral folds usually wanting or incomplete.. 8

Stigmal club very large; front margin of pronotum sharp; metanotum with the lateral folds usually complete.. **Dinotus** Förster (type *D. bidentulus* Först.).

8. Marginal vein at least thrice as long as the stigmal vein; clypeus anteriorly bidentate; metathorax impunctate, with a median carina............ **Rhopalicus** Förster (type *Cleonymus maculifer* Först.).

9. Clypeus at apex unarmed, either truncate, sinuate or incised................................ 10

Clypeus at apex armed with a median tooth.

Thorax long, the pronotum with the front margin acute, laterally dilated, the metathorax with short folds. .... **Stenomalus** Thomson (type *S. crassicornis* Thoms.).

10. Stigmal vein ending in a small or median sized knob or club................................ 11

Stigmal vein ending in a large knob or club.

Metathorax short and usually with a transverse carina; clypeus incised at apex medially; mesepisternum extending to the coxæ.......**Cecidostiba** Thomson (type *C. rugifrons* Thoms.).

Metathorax not short, usually with a fold and often also with a transverse carina; head and thorax usually with rigid pubescence........ **Cænacis** Thomson (type *C. grandiclava* Thoms.).

11. First joint of the flagellum always longer than the pedicel, or of an equal length................. 12

First joint of the flagellum always shorter than the pedicel.................................. 13

12. Pronotum broad, the upper front margin rounded; scutellum with a cross-furrow before apex; abdomen conic-ovate, the second segment usually the largest, the third very short, segments 4–7 more than twice longer than the third, subequal, or very slightly increasing in length; marginal vein usually a little thicker at base than at apex..**Habrocytus** Thomson (type *Pteromalus albipennis* Walk.).

13. Pedicel as long as the ring-joints and the first two joints of the funicle united; metathorax produced into a subglobose neck, the lateral folds distinct, the spiracles large, subreniform; abdomen ovate. **Mormoniella** Ashmead, g. nov. (type *M. brevicornis* Ashm.).

14. Front femora considerably swollen.. 15

Front femora normal... 20

15. Marginal vein in front wings *thickened*.. 16

Marginal vein in front wings *slender*... 18

16. Antennæ with the ring-joints *small*, annular... 17

Antennæ with the ring-joints *large*, not annular................................. **Pandelus** Förster.

17. Metanotum smooth, without folds; stigmal and postmarginal veins short.......... **Metacolus** Förster.

Metanotum with folds and a median carina; stigmal vein longer than the marginal. **Rhaphiteles** Walker.

18. Stigmal club or knob small... 19

Stigmal club very large; front margin of pronotum acute .... **Dinotus** Förster.

19. Marginal vein very long; clypeus anteriorly bidentate.......................... **Rhopalicus** Förster.

20. Clypeus at apex unarmed, truncate, sinuate or incised.................................... 21

Clypeus at apex armed with a median tooth............................ **Stenomalus** Thomson.

21. Stigmal vein ending in a large knob.. 22

Stigmal vein ending in a small or moderate sized club...................................... 23

22. Clypeus at apex incised medially; metathorax short and usually with a transverse carina. **Cecidostiba** Thomson.

Clypeus not incised; metathorax not short, usually with a fold and often also with a transverse carina; head and thorax usually with rigid bristles.................................. **Cænacis** Thomson.

23. Pronotum broad, the front margin acute; metathoracic spiracles oval or oblong; first joint of the funicle always longer than the pedicel.................................. **Habrocytus** Thomson.
Pronotum not broad, the front margin not acute; first joint of the funicle much shorter than the pedicel.. **Mormoniella** Ashmead.

TRIBE III. *Eutelini.*

In its mandibular characters this tribe agrees with the *Rhaphitelini*, and is easily confused with the latter; but the antennæ are inserted differently, always low down on the face, usually close to the clypeus, *on* or *below* an imaginary line drawn from the base of the eyes.

The species falling in this group differ also in habits since they attack dipterous gall-makers, *Cecidomyidæ*, etc.

TABLE OF GENERA.

1. Females.. 2
Males.. 7
2. Metathorax *with* distinct lateral folds.. 3
Metathorax *without* lateral folds.
    Marginal vein not or only a little longer than the stigmal vein; metathorax long; first joint of the flagellum short.
        Antennæ inserted on an imaginary line drawn from the base of the eyes; abdomen not compressed, the ventral valve normal. **Amblymerus** Walker (type *A. dubius* Walk.).
        Antennæ inserted just above the clypeus, below such an imaginary line; abdomen compressed, the ventral valve prominent.... **Psilonotus** Walker (type *P. adamas* Walk.).
3. Thorax short; head with a rather narrow vertex, the ocelli arranged in a very short obtuse angle.. 4
Thorax long; head with a broad vertex; ocelli large, in a triangle; pronotum with the front margin acute.. 5
4. Marginal vein about twice as long as the stigmal vein...... **Eutelus** Walker (type *E. vulgaris* Walk.).
Marginal vein not nearly twice as long as the stigmal vein.
Platymesopus Westwood (type *P. tibialis* Westw.).
5. Abdomen ovate, shorter than the thorax.. 6
Abdomen long, conically produced, triangularly compressed or carinate beneath.
    Marginal vein hardly twice as long as the stigmal vein.
    Platyterma Walker (type *P. nobile* Walk.).
    Marginal vein nearly thrice as long as the stigmal vein.
    Mesopolobus Westwood (type *M. fasciiventris* Westw.).
6. Marginal vein hardly longer than the stigmal vein; antennæ rather short, the flagellum subclavate, the pedicel long, obconical, the funicle joints wider than long; metathorax not short, with a median carina, the spiracles oval............... **Nasonia** Ashmead, g. nov. (type *N. brevicornis* Ashm.).
7. Thorax short; head with rather a narrow vertex; ocelli arranged in a very obtuse angle.......... 8
Thorax long; head with a broad vertex; ocelli large, arranged in a triangle...................... 9
8. Marginal vein about twice as long as the stigmal vein; middle tibiæ normal........ **Eutelus** Walker.
Marginal vein not nearly twice as long as the stigmal vein; middle tibiæ broadly dilated.
Platymesopus Westwood.

9. Marginal vein short, hardly longer than the stigmal vein 10
Marginal vein from about twice to thrice as long as the stigmal vein.
Marginal vein about twice as long as the stigmal vein ; middle tibiæ normal. **Platyterma** Walker.
Marginal vein nearly thrice as long as the stigmal vein ; middle tibiæ with a small hirsute lobe outwardly near the tip .... **Mesopolopus** Westwood.
10. Metathoracic spiracles oval .... **Nasonia** Ashwood.

TRIBE IV. *Pteromalini.*

To this tribe belong all species having both mandibles 4-dentate. It is a large tribe, with many genera and species, and some are of world-wide distribution.

Pteromalus puparum L. is the commonest and best known of all Chalcidoids, and is found in every hemisphere; it attacks various lepidopterous insects, *Pieris rapæ*, the cabbage butterfly, being especially subject to its attacks.

TABLE OF GENERA.

1. Females.......... 2
Males 30
2. Occipital foraminal depression immargined.......... 8
Occipital foraminal depression margined or rimmed.
Metathorax produced into a subglobose neck at apex, the median carina and lateral folds usually present.
Antennæ with 3 ring-joints.......... 3
Antennæ with 2 ring-joints.......... 4
3. Abdomen with the second segment large, the last segment produced into a long, slender, compressed stylus resembling an ovipositor.
Metathorax produced into a subglobose neck, punctate and tricarinate, the spiracles small, oblong ; metopleural ridge fringed with white hairs. **Belonura** Ashmead (type *B. singularis* Ashm.).
4. Eyes hairy ; antennæ clavate, incrassate.......... 5
Eyes bare ; antennæ filiform or subclavate.......... 7
5. Abdomen ovate or rotund, the second segment small or never occupying more than half the whole surface.......... 6
Abdomen ovate, the second segment very large, occupying most of the surface, the third very small.. .... **Isocyrtus** Walker (type *I. lætus* Walk. ? = *breviventris* Walk.).
6. Abdomen ovate, the second segment occupying at most not more than half the surface, the third not small, two or more times longer than the fourth ; tibiæ with rigid bristles ; wings sometimes maculate, the postmarginal vein always longer than the stigmal. **Urolepis** Walker = *Halizoa* Förster (type *Ormocerus maritimus* Walk.).
Abdomen rotund ; wings immaculate, the postmarginal vein not longer than the stigmal, usually somewhat shorter.......... **Trichoglenes** Thomson (type *Pteromalus complanatus* Ratz.).
7. Abdomen ovate, the second segment occupying not more than one third the surface, the sides more or less fimbriate ; funicle joints 4–6 a little wider than long, the club subulate. **Trichomalus** Thomson (type *T. punctinucha* Thoms.).

8. Metathorax produced at apex into a subglobose neck; postmarginal vein always longer than the stigmal.......... 9

Metathorax *not* produced into a subglobose neck at apex, rarely with a small neck; postmarginal vein very rarely longer than the stigmal, most frequently shorter, or of an equal length.......... 21

9. Pedicel always distinctly longer than the first funicle joint, more rarely of an equal length; the first joint of funicle usually the shortest of the funicle joints; metathoracic spiracles small, round, oval, long oval or elliptical.......... 10

Pedicel usually shorter than the first joint of the funicle, never longer; the first joint of the funicle usually the longest of the funicle joints; metathoracic spiracles large, oblong-oval or elliptical. 18

10. Antennæ with *two* ring-joints.......... 11

Antennæ with *three* ring-joints.......... 17

11. Metathoracic spiracles oblong-oval, the lateral folds and the median carina present.......... 12

Metathoracic spiracles not oblong-oval.......... 13

12. Abdomen conic-ovate, the third and fourth segments subequal, united as long as the second, the fifth hardly as long as the fourth or sixth; flagellum subclavate, the joints of the funicle gradually decreasing in length, not transverse; head wide, the temples oblique but rather broad.

Polyscelis Dalla Torre (type *Pteromalus conspersus* Walk.).

Abdomen ovate, pointed at apex, depressed above, keeled beneath; antennæ clavate.

Paphagus Walker (type *P. sidæ* Walk.).

13. Metathorax with the lateral folds and usually the median carina present; abdomen ovate, beneath boat-shaped or carinate; flagellum clavate or subclavate, the club large, thicker than the funicle.

Meraporus Walker (type *M. graminicola* Walk.).

Metathorax with the lateral folds complete, the median carina absent; abdomen short oval, convex beneath; flagellum filiform or nearly, not or only slightly thickened towards apex, the joints transverse, the club subulate; head transverse, the vertex subacute, the temples flat and very narrow.

Endomychobius Ashmead (type *E. flavipes* Ashm.).

15. Metathoracic spiracles oval.......... 16

Metathoracic spiracles small, rounded.

Metanotum *without* a median carina; abdomen conic-ovate, beneath subconvex, the second segment occupying about one third the whole surface, segments 3–6 subequal, the 7th the longest, the 8th conical; flagellum filiform, or at the most subclavate; marginal vein long, slightly thickened.......... **Scymnophagus** Ashmead, g. nov. (type *S. townsendi* Ashm.).

16. Metathorax very short, smooth, impunctate, with a median carina; scutellum convexly rounded; abdomen short, ovate, not longer than the thorax, boat-shape beneath, the second segment occupying one third the surface, the following short, subequal.

Epipteromalus Ashmead, g. nov. (type *E. algonquinensis* Ashm.).

17. First two ring-joints minute, equal, smaller than the third; funicle joints wider than long; metathorax not short, the lateral folds incomplete, the spiracles oval; abdomen ovate, as long as the head and thorax united.

18. Abdomen ovate, not longer than the head and thorax united, usually a little shorter, the apical margins of the segments straight, not incised or emarginate.......... 19

Abdomen conic-ovate, often carinate beneath, and usually a little longer than the head and thorax united, the second segment the longest, the third usually the shortest, both sometimes, but not always, with a slight incision or emargination at apical middle; segments 4–6 most frequently increasing in length, the eighth conical; sometimes segments 2–5 are subequal.......... 20

19. Second abdominal segment about twice as long as the third or a little longer, segments 3–5 subequal, 6 and 7 longer; venter subconvex or convex. **Pteromalus** Swederus (type *Ichneumon puparum* Linné).

Second abdominal segment about three times as long as the third, segments 4 and 5 united not longer than the third, those beyond variable, subequal in length; venter usually strongly compressed or keeled .... **Hypopteromalus** Ashmead, g. nov. (type *Pteromalus tabaeum* Fitch).

20. Marginal vein longer than the stigmal; metathoracic spiracles usually oblong-oval, close to the postscutellar fold; funicle joints longer than thick, usually about twice as long as thick or nearly; abdomen not strongly carinate beneath towards base. . . . **Catolaccus** Thomson (type *C. cavigena* Thoms.).

Marginal vein only a little longer than the stigmal; metathoracic spiracles small, short oval or subrotund; funicle joints very little longer than thick; abdomen strongly carinate beneath towards base .... (?) **Norbanus** Walker (type *N. dysaulus* Walk.).

21. Postmarginal vein *longer* than the stigmal vein, but rarely a great deal longer 22

Postmarginal vein *shorter* than the stigmal vein, or of an equal length; pedicel small, usually much shorter than the first joint of the funicle; in a single case only is it much longer 27

22. Antennæ with *three* ring-joints... 23

Antennæ with *two* ring-joints... 24

23. Metanotum very short, with a median carina and lateral folds, the latter intersected by a transverse carina or fold that extends on each side from the median carina; spiracles large, oblong; abdomen conic-ovate and somewhat produced at apex.......................... **Neocatolaccus** Ashmead. (type *Catolaccus tylodermæ* Ashm.).

24. Pedicel *shorter* than the first joint of the funicle.. 25

Pedicel *longer* than the first joint of the funicle 26

25. Metanotum with a median carina and lateral folds, the spiracles usually large, long oval or linear; abdomen conic-ovate, keeled beneath; postmarginal vein not or only a little longer than the stigmal. **Metapachia** Westwood (type *M. dispar* Westw.).

Metanotum with a median carina, the lateral folds wanting, the spiracles oval, not large; abdomen ovate, subcompressed beneath; postmarginal vein very long . . . **Parapteromalus** Ashmead, g. nov. (type *P. isosomatis* Ashm.).

26. Metanotum usually with a distinct median carina, the lateral folds incomplete, indicated toward the base, the spiracles oval or elliptic.

Abdomen conic-ovate..................... **Hypopteromalus** Ashmead (type *P. tabaeum* Fitch).

Abdomen rotund...................... **Diglochis** Förster (type *Pteromalus omnivorus* Walk.).

27. Head wide, but the temples and cheeks rounded, not especially broad; pedicel shorter than the first joint of the funicle. 28

Head large, broad, the temples and the cheeks broad, acute; pedicel long, much longer than the first joint of the funicle.

Antennæ inserted just above the clypeus; abdomen rotund, wider than the thorax, rarely ovate. **Cœlopisthia** Förster (type *Pteromalus cephalotes* Walk.).

28. Antennæ inserted on or very near the middle of the face, never far below the middle............ 29

Antennæ inserted far below the middle of the face.

Metathorax not very short; abdomen ovate or conic-ovate, usually convex beneath. **Dibrachys** Förster (type *Pteromalus boucheanus* Ratz.).

29. Abdomen conic-ovate, not much produced beneath, if at all .... **Arthrolytus** Thomson. (type *A. punctatus* Thoms.).

Abdomen conic-ovate, but beneath towards base, acutely triangularly produced. **Metapachia** Westw. (partim).

30. Occipital foraminal depression distinctly margined or rimmed.................................... 31
Occipital foraminal depression simple, immargined.................................... 37

31. Metathorax at apex produced into a subglobose neck, the median carina and the lateral folds usually present.
Antennæ with *two* ring-joints.................................... 32
Antennæ with *three* ring-joints.................................... **Belonura** Ashmead.

32. Eyes hairy.................................... 33
Eyes bare, not hairy.................................... 36

33. Postmarginal vein longer than the stigmal.................................... 34
Postmarginal vein *not* longer than the stigmal, usually a little shorter.................................... 35

34. Second abdominal segment very large.................................... **Isocyrtus** Walker.
Second abdominal segment normal; flagellum subclavate, pubescent, the joints transverse or quadrate.
Urolepis Walker.

35. Flagellum subclavate or clavate, clothed with a short pubescence, the joints usually much wider than long; tibiæ with rigid bristles; abdomen rotund, the second segment not especially large.
Trichoglenes Thomson.

36. Antennæ filiform, pubescent; funicle joints 4 to 6 usually a little wider than long or not longer than wide.................................... **Trichomalus** Thomson.

37. Metathorax at apex usually produced into a subglobose neck; postmarginal vein always longer than the stigmal.................................... 38
Metathorax at apex normal; postmarginal vein rarely longer than the stigmal, most frequently shorter or of an equal length.................................... 46

38. Legs normal, the middle tibiæ not dilated.................................... 39
Legs abnormal, the middle tibiæ dilated toward tips; antennæ with the joints alternately white and brown.................................... **Polyscelis** Thomson.

39. Pedicel long, always longer than the first joint of the funicle.................................... 40
Pedicel short, never longer than the first joint of the funicle, usually much shorter, the first joint of the funicle the longest of the funicle joints.................................... 41

40. Metathoracic spiracles small, elliptic; abdomen short oval, depressed; flagellum filiform, pilose, the joints cup-shaped, transverse.................................... **Endomychobius** Ashmead.
Metathoracic spiracles oval; abdomen boat-shaped; flagellum subfiliform or subclavate, pubescent, the club always longer and stouter than the pedicel.................................... **Meraporus** Walker.

41. Antennæ with *two* ring-joints.................................... 42
Antennæ with *three* ring-joints?

42. Metathoracic spiracles small, rounded.................................... 43
Metathoracic spiracles not small, rounded.................................... 44

43. Antennæ subclavate, pubescent; abdomen oblong-oval, flat, beneath at the most convex.
Scymnophagus Ashmead.

44. Metathoracic spiracles long oval or oblong, more rarely subreniform or linear.................................... 45
Metathoracic spiracles smaller, oval or broadly oval.
Metanotum very short, smooth, impunctate with a median carina.... **Epipteromalus** Ashmead.

45. Metathoracic spiracles long-oval or oblong.
Abdomen oblong-oval, dorsal segments 3–5 unequal, gradually increasing in length, united a little longer than the second; flagellum filiform, pubescent, the joints of the funicle about twice as long as thick or longer.................................... **Pteromalus** Swederus.

Metathoracic spiracles oblong, linear or subreniform.

Abdomen oblong, at least 2½ times as long as wide, dorsal segments 3–6 subequal; flagellum filiform, the joints of the funicle longer than thick. . . . . **Catolaccus** Thomson.

46. Postmarginal vein longer than the stigmal 47

Postmarginal vein shorter than the stigmal or no longer 49

47. Antennæ with *two* ring-joints. 48

Antennæ with *three* ring-joints.

Metathorax short with a median carina and lateral folds, the latter intersected by a transverse carina which extends from the short median carina; the spiracles large, oblong. **Neocatolaccus** Ashmead.

48. Metathorax *with* a distinct median carina, the lateral folds incomplete, the spiracles usually oval; head large, broad, the vertex broad. . . . . **Diglochis** Förster.

Metathorax *without* a median carina, the lateral folds absent, the spiracles oval or ovate, not large; head transverse, not large, the temples flat . . . . **Parapteromalus** Ashmead.

49. Antennæ inserted on or near the middle of the face, or far above the clypeus 50

Antennæ inserted far below the middle of the face or just above the clypeus.

Head large, broad, the temples broad, acute; metathorax short, the lateral folds absent; abdomen very short, rounded, depressed . . . . **Cœlopisthia** Förster.

Head large, broad, but the temples rounded, not acute; metathorax not very short, the lateral folds complete; abdomen oblong-oval, depressed . . . . **Dibrachys** Förster.

50. Antennæ subclavate, pubescent, the club much stouter than the funicle, the pedicel much longer than the first joint of the funicle. . . . . **Metapachia** Westwood.

Antennæ filiform, pubescent or pilose, the pedicel much shorter than the first joint of the funicle; funicle joints 1–4 distinctly longer than thick. . . . . **Arthrolytus** Thomson.

SUBFAMILY II. MERISINÆ.

The absence of the spiracular sulci, an important character, alone distinguishes this tribe; otherwise it closely resembles the subfamily *Pteromalinæ*, its relationship being quite close through the tribe *Eutelini*, with the gall-inhabiting species in the tribe *Merisini*.

I have recognized three tribes; the first being parasites of Coleoptera, the second of Diptera, while the third attack Rhynchota belonging to the homopterous families *Aphididæ*, *Aleurodidæ* and *Coccidæ*.

TABLE OF TRIBES.

1. Metanotum *without* a trace of a median carina 2

Metanotum *with* the median carina more or less distinct or at least indicated basally; mesonotum with incomplete furrows . . . . Tribe I. Roptrocerini.

2. Mesonotum with *incomplete* furrows. . . . . Tribe II. Merisini.

Mesonotum with *complete* furrows . . . . Tribe III. Isoplatini.

TRIBE I. *Roptrocerini.*

This tribe is distinguished by the metanotum, which always has a more or less distinct median carina; or at least it is never wholly absent as in the *Merisini* and the *Isoplatini*.

TABLE OF GENERA.

1. Females.. 2

Males.. 5

2. Ovipositor strongly exserted; marginal vein about twice as long as the stigmal vein or even longer; antennæ with *two* ring-joints.. 3

Ovipositor not exserted, at the most with only the tip of the sheaths exposed...................... 4

3. Antennæ 13-jointed, inserted just above the clypeus; scape not attaining the ocelli; funicle joints 2–6 transverse, the club not stout, rounded at tip....... **Anogmus** Förster (type *A. strobilorum* Thoms.).

Antennæ 13-jointed, inserted on the middle of the face or nearly, the flagellum stout, subclavate; funicle joints 3–6 stout, transverse, the club very stout, oblong.....................**Roptrocerus** Ratzeburg. (type *R. xylophagarum* Ratz.).

4. Antennæ with *two* ring-joints; abdomen conic-ovate, pointed at tip.

Abdomen longer than head and thorax united, carinate beneath, the third segment the shortest, segments 4 and 5 increasing in length, the sixth a little shorter than the fifth, seventh and eighth subequal, about as long as the fourth, the eighth conical with the spiracles distinct; sheaths of ovipositor slightly projecting..........**Uriella** Ashmead (type *U. rufipes* Ashm.).

Abdomen, as seen from above, conic-ovate, beneath compressed and strongly, triangularly carinate, as long as the thorax, segments 2–4 about equal, united not longer than the first, metathorax very short, smooth, but with a median carina, the spiracles rounded.

Tropidogastra Ashmead, g. nov. (type *T. arizonensis* Ashm.).

5. Antennæ 13-jointed, with *two* ring-joints, inserted on or near the middle of the face................ 6

Antennæ 13-jointed, with *two* ring-joints, inserted just above the clypeus...........**Anogmus** Förster.

6. Metathoracic spiracles small, rounded; flagellum long, filiform; abdomen oblong-oval, fully as long as the thorax; marginal vein slender, longer than the stigmal vein...........**Roptrocerus** Ratzeburg.

Metathoracic spiracles large, oval; flagellum shorter, subclavate; abdomen oblong-oval, a little longer than the thorax, subcarinate beneath towards base; marginal vein stout and not longer than the stigmal vein with its knob...**Uriella** Ashmead.

TRIBE II. *Merisini.*

This tribe is at once separated from the *Isoplatini* by having *incomplete*, never complete, mesonotal furrows, the furrows at the most being indicated only anteriorly.

TABLE OF GENERA.

1. Females.. 2

Males.. 5

2. Metathorax not terminating in a subglobose neck.. 3

Metathorax terminating in a subglobose neck.

First joint of the funicle short, much shorter than the pedicel; abdomen subovate or subrotund, the second segment (first body) occupying fully one half or more of the whole surface.

Micromelus Walker (type *M. rufomaculatus* Walk.).

3. Marginal vein not or hardly longer than the stigmal vein, the front wings often with a submarginal or discoidal cloud.. 4

Marginal vein distinctly longer than the stigmal vein, the front wings without a submarginal or discoidal cloud.

Abdomen longer than the thorax and ending in a short or subexserted ovipositor.

Phænacra Förster.

Abdomen ovate, not longer than the thorax, the ovipositor not exserted, the second segment (first body) occupying about one fourth the whole surface, the third segment small.

Merisus Walker (type *M. splendidus* Walk.).

4. Abdomen ovate, the dorsum usually flat, the second segment not occupying one fourth the whole surface, segments 3–6 subequal............**Homoporus** Thomson (type *Pteromalus fulviventris* Walk.).

5. Metathorax not ending in a subglobose neck.. 6

Metathorax ending in a subglobose neck.

Abdomen subrotund or short ovate, the second segment large, occupying one half or more of the whole surface; antennæ filiform, clothed with a short, fine pubescence.

Micromelus Walker.

6. Marginal vein always distinctly longer than the stigmal vein.................................... 7

Marginal vein *not* or scarcely longer than the stigmal vein.................................... 8

7. Antennæ at apex stylate; abdomen oval, depressed..........................**Phænacra** Förster.

Antennæ at apex normal; abdomen oblong, narrowed, the second segment not quite as long as the three following united, which are short and subequal, the fourth very slightly the longest; antennæ filiform, rather densely pubescent...**Merisus** Walker.

8. Abdomen short, spatulate, the second segment as long as or a little longer than the three following united, which are very short, the third the longest; antennæ filiform, densely pubescent.

Homoporus Thomson.

TRIBE III. *Isoplatini.*

In this tribe the mesonotal furrows are always distinct, complete, while the antennæ are usually inserted far anteriorly near the mouth border.

TABLE OF GENERA.

1. Females. 2

Males... 5

2. Non-metallic; mandibles variable, sometimes edentate.. 3

Metallic; mandibles dentate.

Abdomen compressed, the ventral valve prominent; stigmal vein as long as the marginal, ending in a small knob.........................**Isoplata** Förster (type *I. geniculata* Först.).

3. Mandibles acute, edentate... 4

Mandibles broad, dentate.

Abdomen conic-ovate; antennæ short, strongly clavate, inserted near the mouth border, the pedicel large; stigmal vein as long as the marginal, clavate.

Cœlocyba Ashmead (type *C. nigrocincta* Ashm.).

4. Abdomen short, globose, depressed above; marginal vein not or scarcely longer than the stigmal vein; metathorax very short.

Stigmal vein ending in a small knob; abdomen with the first dorsal segment elongate, occupying half or more of the whole surface........**Terobiella** Ashmead (type *T. flavifrons* Ashm.).

Stigmal vein ending in a moderately large knob; abdomen with the dorsal segments short.

Brachyscelidiphaga Ashmead (type *B. flava* Ashm.).

5. Non-metallic; mandibles acute or broad, dentate.. 6

Metallic; mandibles dentate...**Isoplata** Förster.

6. Mandibles acute, edentate... 7

Mandibles broad, dentate.

Antennæ short, clavate, inserted close to the mouth border; stigmal vein long, clavate. **Cœlocyba** Ashmead.

7. Stigmal vein ending in a small knob. .... **Terobiella** Ashmead.

Stigmal vein ending in a moderately large knob. .... **Brachyscelidiphaga** Ashmead.

Subfamily III. Eunotinæ.

1863. Muscidides Motschulsky, Bull. Soc. Imp. Nat., XXXVI, 1863 (2), p. 69.

1872. Family? Walker, Notes on Chalc., VI., p. 100.

1898. Muscideinæ, Subfam. dubia, Dalla Torre, Cat. Hym., V, p. 87.

This small subfamily comprises a number of genera, all evidently of tropical origin, and all parasites of the rhynchotous family *Coccidæ*.

The first genus to be described was *Eunotus* Walker, in 1834. It was later named *Trityphus* by Ratzeburg, and again rechristened *Megapelte* by Förster.

In 1863 Motschulsky described, briefly, poorly, and sometimes inaccurately, several new genera from Ceylon, which belong here, and proposed for the group the name *Muscidides*, stating that "Ils se distinguent des Pteromalides par leur forme plus raccourcie et plus large, qui rappelle celle des Chalcidides et par leur mésonotum, qui prend quelquefois une telle extensione, qu'il recouvre tout l'abdomen, comme ches les Scutellaires parmi Hémiptères, ce qui fait replier les ailes horisontalement sous ce mésonotum d'une manière analogue. Les ailes sont pubescent comme chez les Pteromalides."

The genus *Eunotus* Walker, was described twenty years before *Muscidea* Motschulsky, and I prefer to call the group *Eunotinæ*, after the first described genus, in accordance with the rules of zoölogical nomenclature, rather than the *Muscideinæ*, the term *Muscidides* not being tenable.

Cephaleta Motschulsky, if I have identified it correctly, belongs here, but Motschulsky correlated with it a male insect with *branched* antennæ, which, from the description and the poor figure, I think is a Eulophid, and probably identical with *Pentacladia* Westwood, described in 1835.

TABLE OF GENERA.

1. Females. 2

Males 12

2. Scutellum large, but not extending beyond the base of the abdomen 3

Scutellum abnormally large, extending over most of the abdomen.

Head very wide, lenticular, wider than the thorax; antennæ 8 or 9-jointed, the flagellum clavate. .... **Scutellista** Motschulsky (type *S. cyanea* Motsch.).

3. Second dorsal abdominal segment much shorter, at the most occupying only a little more than half the whole surface of the abdomen. 5

Second dorsal abdominal segment long, occupying nearly the whole surface of the abdomen; eyes pubescent.
Antennæ 9-jointed; scutellum twice the length of the mesonotum.
Euargopelte Förster (type *E. obscura* Förft.).
Antennæ 10-jointed; scutellum not twice the length of the mesonotum.
Eunotus Walker (type *E. cretaceus* Walk.).
5. Postmarginal vein rather short, not longer than the stigmal vein, sometimes shorter.............. 6
Postmarginal vein not short, always longer than the stigmal vein.
Antennæ 9-jointed or less.. 8
Antennæ 10-jointed, the joints large, depressed, and narrowed toward apex; body greenish metallic, punctate.................... **Mnoonema** Motschulsky (type *M. timida* Motsch.).
6. Antennæ 7-jointed or less.. 7
Antennæ 8-jointed, clavate, funicle joints 2–4 transverse.
Muscidea Motschulsky (type *M. pubescens* Motsch.).
7. Antennæ 7-jointed, subclavate, the last joint large, oval, joints 2–4 not transverse.
Cardiogaster Motschulsky (type *C. fusciventris* Motsch.).
Antennæ 6-jointed, filiform, depressed, joints 3-5 nearly equal, the sixth a little longer, acuminate at apex................................ **Solenoderus** Motschulsky (type *S. cyaniventris* Motsch.).
8. Antennæ 9-jointed, or less.. 9
Antennæ 10-jointed .... **Anysis** Howard (type *H. australiensis* How.).
9. Antennæ 8-jointed or less.. 10
Antennæ 9-jointed.. ? genus.
10. Antennæ 7-jointed.. 11
Antennæ 8-jointed.............................. **Eurycranium** Ashmead [*] (type *E. alcocki* Ashm.).
11. Antennæ 7-jointed...................... **Cephaleta** Motschulsky (type *C. purpuriventris* Motsch.).
12. Scutellum not extending beyond the base of the abdomen.................................. 13
Scutellum abnormally large, covering most of the abdomen................ **Scutellista** Motschulsky.
13. Abdomen with the second dorsal segment shorter, not nearly occupying the whole of the surface.. 14
Abdomen with the second segment large, occupying nearly the whole surface; eyes pubescent.
Antennæ 10-jointed.. **Eunotus** Walker.
Antennæ 9-jointed.. **Euargopelte** Förster.
14. Postmarginal vein well developed, always longer than the stigmal 15
Postmarginal vein not well developed, not longer than the stigmal, sometimes shorter........... 17
15. Antennæ 9-jointed or less.. 16
Antennæ 10-jointed .... **Mnoonema** Motschulsky.
16. Antennæ 8-jointed or less.. 7
Antennæ 9-jointed, filiform.. **Muscidea** Motschulsky.
17. Antennæ 8-jointed.. **Cardiogaster** Motschulsky.
Antennæ 7-jointed.. **Solenoderus** Motschulsky.
18. Antennæ 9-jointed.
Lateral ocelli almost touching the eye margin.............................. **Anysis** Howard.
Lateral ocelli twice their width from the eye margin................. **Eurycranium** Ashmead.
Antennæ (?) 7-jointed, with 5 branches.
Cephaleta Motsch. (partim) ? = *Pentacladia* Westw., a Eulophid.

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[*] Equals *Eurycephalus* Ashm., Indian Mus. Notes, V., 1903, p. 61, preoccupied.

Subfamily IV. Sphegigasterinæ.

1856. Miscogasteroidæ, Familie 14 (partim), Förster, Hym. Stud., II., p. 24.
1856. Miscogastroidæ, Familie 14 (partim), *opus cit.*, p. 51.
1875. Sphegigastrides, Subtribus (partim), Thomson, Hym. Skand., IV., p. 217.
1875. Caratomides, Subtribus, Thomson, *opus cit.*, p. 216.
1887. Pteromalinæ, Subfamily (partim), Howard, Ent. Amer., II., pp. 33 and 35.
1897. Sphegigasterinæ, Subfamily III., Ashmead, Proc. Ent. Soc. Washington, IV., p. 248.
1898. Chrysolampinæ, Subfamily, Dalla Torre, Cat. Hym., V., p. 16.

This subfamily is distinguished from the three preceding subfamilies by the distinctly petiolated abdomen, and from the two which are to follow, which also have the abdomen petiolate, by other characters; from the *Spalangiinæ* by having a totally different shaped head, and by the venation; from the *Diparinæ* by thoracic and antennal characters.

Four very distinct minor groups, here called tribes, have been recognized.

TABLE OF TRIBES.

1. Antennæ inserted near the mouth border or just above the clypeus.................................. 2
   Antennæ inserted on or near the middle of the face, *far* above the clypeus.......................... 3
2. Head usually lenticular, much wider than the thorax, deeply concave behind, rarely normal; parapsidal furrows complete.. Tribe I. Asaphini.
3. Front wings with a slender marginal vein.. 4
   Front wings with a thick, stout, usually short marginal vein.................Tribe II. Pachyneurini.
4. Head transverse, the temples not very broad.........................Tribe III. Sphegigasterini.
   Head very large, the temples very broad, the frons sometimes cornuted.........Tribe IV. Cratomini.

Tribe I. *Asaphini.*

This tribe is readily distinguished from the others in the subfamily by the antennæ being inserted near the mouth border, or just above the clypeus; they are never inserted near the middle of the face.

It is based upon the genus *Asaphes* Walker, which was rechristened *Isocratus* by Dr. Förster, and placed by him in the subfamily *Spalangiinæ*, with which group it has nothing in common.

The habits of the genera falling in this tribe are fairly uniform, the vast majority of the species being parasites upon plant-lice, *Aphididæ*, and upon the bark-lice, *Coccidæ*.

TABLE OF GENERA.

1. Females.. 2
   Males.. 10

2. Head very wide, the occiput strongly concave.. 3

Head not especially wide, the occiput not strongly concave.. 6

3. Winged.. 4

Wingless or subapterous.

Antennæ strongly clavate, 9-jointed, ending in a large, solid ovate club, the scape dilated at apex; funicle 6-jointed, joints 2–6 transverse, the sixth about four times as wide as long; metathorax very short, without carinæ, the spiracles small, rounded; abdomen oval, the petiole scarcely longer than thick, the third segment (second body segment) a little longer than the second........................**Pheidoloxenus** Ashmead, g. nov. (type *P. wheeleri* Ashm.).

4. Antennæ 10-jointed.. 5

Antennæ 13-jointed... 9

5. Abdomen with the second segment abnormally large, occupying most of the surface.

Marginal vein scarcely longer than the stigmal vein, the postmarginal vein wanting; body of abdomen with a tuft of hairs on each side at base.

Tomocera Howard (type *T. californica* How.).

Marginal vein fully twice as long as the stigmal vein, the postmarginal vein distinct, about the length of the stigmal; no tuft of hairs at base of abdomen.

Ophelosia Riley (type *O. crawfordi* Riley).

6. Marginal vein about three times as long as the stigmal vein or a little longer.................... 7

Marginal vein short, at the most scarcely twice as long as the stigmal vein, usually shorter....... 8

7. Antennæ 10-jointed, the second joint of the funicle twice as long as the first; scutellum *with* a cross-furrow before the apex............................ **Aphobetus** Howard (type *A. maskelli* How.).

Antennæ 13-jointed... 9

8. Marginal vein hardly twice as long as the stigmal vein, the postmarginal vein very short; antennæ 10-jointed, the joints of the funicle short, submoniliform; scutellum *without* a cross-furrow before the apex.......................... **Aphobetoideus** Ashmead, g. nov. (type *A. comperei* Ashm.).

Marginal vein hardly as long as the stigmal vein, the postmarginal vein long; antennæ 13-jointed, with 2 ring-joints.......................................**Asaphes** Walker (type *A. vulgaris* Walk.).

9. Marginal vein about thrice as long as the stigmal vein.

Parasaphes Ashmead, g. nov. (type *P. iceryæ* Ashm.).

10. Antennæ 9 or 10-jointed; head usually wide.. 11

Antennæ 13-jointed; head normal... 14

11. Postmarginal vein wanting or very short.. 12

Postmarginal vein distinct, about the length of the stigmal vein.

Marginal vein twice as long as the stigmal; no tuft of hairs at base of scutellum.

Ophelosia Riley.

12. Marginal vein long, about twice as long as the stigmal or even thrice as long.................. 13

Marginal vein short, hardly as long as the stigmal.

Abdomen with a tuft of hairs on each side at base; antennæ dentate.......**Tomocera** Howard.

13. Antennæ 9-jointed.

Scutellum *without* a cross-furrow before apex...........................**Aphobetus** Howard.

Scutellum *with* a cross-furrow before apex.........................**Aphobetoideus** Ashmead.

14. Marginal vein scarcely as long as the stigmal vein, a little thickened at base, the postmarginal vein long...**Asaphes** Walker.

Marginal vein about thrice as long as the stigmal vein...................... **Parasaphes** Ashmead.

TRIBE II. *Pachyneurini.*

In this tribe the antennæ are inserted near the middle of the face, and the marginal vein in the front wings is always *thickened* and usually short.

The species, like the *Asaphini* are said to be parasites of coccids and aphids, but these insects have other hymenopterous parasites, braconids, encyrtids, cynipids, etc., and the *Pachyneurini* are probably hyperparasites of these insects.

A few have also been bred from dipterous insects belonging to the family *Syrphidæ*, which also have other hymenopterous parasites, and this seems to confirm the hyperparasitism of these insects.

TABLE OF GENERA.

1. Females 2
   Males 7
2. Mesothoracic furrows distinct, complete 3
   Mesothoracic furrows incomplete, indicated only anteriorly 4
3. Stigmal vein with a large knob; abdomen ovate, pointed at apex, the second segment large, the third segment very short, the fourth and fifth rather large, subequal, the following very short.
   Pachycrepis Förster (type *Caruna clavata* Walk.).
   Stigmal vein with a small knob; abdomen ovate, the second and the third segments large, the fourth and fifth very short, the sixth and seventh longer.
   Pachycrepoideus Ashmead, g. nov. (type *P. dubius* Ashm.).
4. Abdomen above flat or depressed 5
   Abdomen above convexly rounded 6
5. Pronotum much narrower than the mesonotum across the shoulders; abdomen oval or short ovate, the second segment the longest, occupying a good portion of the surface, the third and fourth short, nearly equal, the following very short .... **Pachyneuron** Walker (type *P. formosum* Walk.).
   Pronotum as wide as the mesonotum across the shoulders; scutellum with a cross-furrow just before the apex; abdomen seen from above ovate, nearly as long as the head and thorax united, beneath compressed or keeled, the ventral valve prominent, plowshare-shaped, the second segment fully twice as long as the third, or longer, the fourth a little longer than the third, the following subequal, the sixth as long or a little longer than the fifth .... **Euneura** Walker (type *E. augarus* Walk.).
6. Pronotum narrower than the mesothorax; scutellum without a cross-furrow before apex; abdomen ovate, the second segment the longest, the third, fourth and fifth not short, subequal, the fourth a little the longest, the sixth about one third shorter than the fifth.
   Hypsicamera Förster (type *H. ratzeburgii* Reinhard).
7. Mesothoracic furrows incomplete, indicated only anteriorly 8
   Mesothoracic furrows complete.
      Stigmal club large .... **Pachycrepis** Förster.
      Stigmal club small .... **Pachycrepoideus** Ashmead.
8. Pronotum as wide as the mesonotum; scutellum with a cross-furrow before the apex. **Euneura** Walker.
   Pronotum narrower than the mesonotum; scutellum without a cross-furrow before apex.
      Metanotum rather short; funicle joints not more than twice as long as thick.
      Pachyneuron Walker.
      Metanotum long; funicle joints thrice as long as thick .... **Hypsicamera** Förster.

TRIBE III. *Sphegigasterini.*

The species falling in this tribe are easily recognized by the much longer and more slender marginal vein. They differ from the others also in habits, the majority of the species being parasites of dipterous insects, and especially of the gall-making species belonging principally to the family *Cecidomyiidæ*.

TABLE OF GENERA.

1. Females.. 2
   Males.. 16
2. Abdominal petiole longer than the hind coxæ.. 3
   Abdominal petiole shorter than the hind coxæ, or at least never longer.. 7
3. Head with the cheeks compressed, the vertex not very narrow.. 4
   Head sublenticular, the cheeks rounded, the vertex narrow.
      Pronotum large, quadrate, mesonotum flat, with complete parapsidal furrows; second abdominal segment very large, occupying fully two thirds of the whole surface of the abdomen, the following very short.......................... **Syntomopus** Walker (type *S. thoracicus* Walk.).
4. Mesothoracic furrows incomplete, abbreviated posteriorly or only distinct anteriorly.............. 5
   Mesothoracic furrows complete, distinct.
      Scutellum *with* a cross-furrow before the apex; abdomen short oval, keeled beneath, the second and third segments very large, the second broadly emarginate at apical margin.
      Merismus Walker (type *M. megapterus* Walk.).
      Scutellum convex, *without* a cross-furrow before the apex, the second segment large, occupying a little more than half the whole surface of the abdomen, the apical margin straight, not emarginate.............................. **Acroclisis** Förster (type *A. nigricornis* Först.).
5. Metanotum usually smooth, but always *with* a median carina (except sometimes in *Polycyrtus*), the lateral folds also usually present.. 6
   Metanotum punctate, *without* either a median carina or lateral folds.
      Scutellum convex, *without* a cross-furrow before the apex; abdomen with the second and third segments very large; sometimes the abdomen is triangulate as in *Perilampus*.
      Trigonogastra Ashmead, g. nov. (type *T. aurata* Ashm.).
6. Scutellum *with* a delicate cross-furrow before the apex; abdomen with the second and third segments very large, the latter about one third the length of the second................ **Sphegigaster** Spinola (type *S. pallicornis* Spin.).
   Scutellum *without* a cross-furrow before the apex or the furrow is subabsolute; abdomen with the second segment very large, occupying half or a little more than half the whole surface, the following very short, often retracted.................... **Cryptoprymna** Förster (type *Prosodes atra* Walker).
7. Mesothoracic furrows incomplete, much abbreviated, or indicated only anteriorly................ 8
   Mesothoracic furrows complete, distinct, rarely only two thirds the length of the mesonotum...... 13
8. Metanotum not broad, and *with* a more or less distinct median carina, or at least the carina is indicated basally.. 9
   Metanotum broad, punctate, *without* a median carina.................................... ? genus.
9. Second abdominal segment at apex broadly and usually deeply, semicircularly emarginate....... 10
   Second abdominal segment at apex not broadly and deeply emarginate, straight or at the most with only a slight sinus.. 11

10. Abdomen ovate, the second and third segments very large, occupying the larger part of the surface.
Cyrtogaster Walker (type *C. vulgaris* Walker).

11. Metanotum punctate, with an abbreviated median carina.. 12

Metanotum smooth, impunctate, but with a distinct median carina.

Pronotum anteriorly not acute; axillæ separated at base of scutellum; abdomen ovate or conic-ovate, the second segment large, occupying about half the whole surface.
Polycystus Westwood (type *P. matthewsii* Westw.).

Pronotum anteriorly acute; axillæ meet at base of scutellum; abdomen triangulated, much as in *Perilampus*, the second segment large........................ **Trigonogastra** Ashmead.

12. Abdomen short, ovate, wider than the thorax, but a little shorter, the second segment twice the length of the third, the apical margin entire, the following segments gradually shortening.
Eurydinota Förster (type *E. leptomera* Förster).

13. Abdomen with the second segment occupying fully one third the whole surface, 3 to 5 subequal in length, the sixth longer than the fifth, the two following very short.
Pterosema Förster (type *P. variicolor* Först.).

14. Metanotum not closely punctate and tricarinate.. 15

Metanotum not long, and smooth, the median carina and lateral folds usually present.

Middle tibiæ normal; abdomen ovate, pointed at apex, the petiole shagreened, with a median ridge, the second segment the largest, occupying about half the whole surface, with a slight incision at apex.. **Polycystus** Westwood.

Middle tibiæ abnormal, incrassate; abdomen short ovate.................. **Spaniopus** Walker
(type *S. dissimilis* Walk.).

15. Abdomen conic-ovate, the petiole rugulose, the second segment occupying at the most one third the whole surface, the following segments subequal, less than half the length of the second; pronotum not short............................**Bubekia** Dalla Torre (type *Brachycrepis tricarinata* Ashm.).

16. Petiole of abdomen long, always longer than the hind coxæ.................................. 17

Petiole of abdomen shorter, not longer than the hind coxæ.................................. 29

17. Mesothoracic furrows complete.. 18

Mesothoracic furrows incomplete, indicated only anteriorly.................................. 21

18. Head with compressed cheeks; pronotum not large, not transverse quadrate..................... 19

Head sublenticular, with rounded cheeks, the vertex antero-posteriorly narrow; antennæ filiform, pubescent.. **Syntomopus** Walker.

19. Scutellum with a cross-furrow before apex.. 20

Scutellum without a cross-furrow before apex.. 28

20. Abdomen with dorsal segments 2 and 3 large, the second twice the length of the third and deeply, broadly, semicircularly emarginate at apex; flagellum subclavate, pubescent... **Merismus** Walker.

Abdomen ovate, the second dorsal segment large, occupying more than half the whole surface, not emarginate at apex.. **Acroclisis** Förster.

21. Metanotum usually smooth, with lateral folds and a median carina; both mandibles 4-dentate..... 24

Metanotum closely punctate and often, but not always, without lateral folds or a median carina, rarely distinct.. 22

22. Abdomen not triangular, either oval or oblong-oval.. 23

Abdomen triangular; mandibles 4-dentate, the outer tooth acute; pronotum anteriorly truncate, the upper front margin acute.. **Trigonogastra** Ashmead.

23. Metathorax not long, but produced into a subglobose neck at apex; both mandibles 3-dentate.... 24

Metathorax long and also produced into a subglobose neck at apex ; pronotum with the front margin rounded ; both mandibles 4-dentate.................................. **Bubekia** Dalla Torre.

24. Palpi normal.. 25

Palpi abnormal.. 26

25. Middle tibiæ abnormal, incrassated at apex.. 27

Middle tibiæ normal.

Abdomen with dorsal segments 2 and 3 large........................ **Sphegigaster** Spinola.

26. Abdomen with the second segment large, occupying most of the surface, its apical margin not incised. **Cryptoprymna** Förster.

Abdomen with the second segment not so large, its apical margin usually with a slight incision ; antennæ, except the club, usually yellow.............................. **Polycyrtus** Westwood.

27. Abdomen short, the second segment at apex not incised........................ **Spaniopus** Walker.

28. Antennæ filiform...? g. nov.

29. Mesothoracic furrows incomplete or indicated only anteriorly...................................... 30

Mesothoracic furrows complete.. 33

30. Metanotum smooth or at the most feebly punctate.. 31

Metanotum punctate or sculptured, opaque.

Abdomen triangular ; pronotum anteriorly truncate, the upper margin acute. **Trigonogastra** Ashmead.

Abdomen oblong-oval ; pronotum anteriorly rounded, the upper margin not acute. **Bubekia** Dalla Torre.

31. Second dorsal abdominal segment at apex, *not* broadly, deeply semicircularly emarginate, either straight or with only a slight incision.. 32

Second dorsal abdominal segment at apex broadly and deeply semicircularly emarginate. **Cyrtogaster** Walker.

32. Head wide but not thick ; antennæ subfiliform, the second ring-joint larger than the first, the scape slender, but hardly reaching to the front ocellus, the funicle joints not longer than thick. **Polycyrtus** Westwood.

Head large and thick, much wider than the thorax ; antennæ clavate, the ring-joints equal, annular, the scape long and slender.............................. **Tityros** Walker (type *T. pareia* Walk.).

33. Metanotum with one or three carinæ.. 34

Metanotum broad, *without* a median carina.

Abdomen with the second segment occupying fully one third the whole surface. **Pterosema** Förster.

34. Metanotum with the lateral carinæ or folds wanting, the median carina present, usually abbreviated. **Eurydinota** Förster.

Metanotum long, closely punctate, tricarinate.............................. **Bubekia** Dalla Torre.

TRIBE IV. *Cratomini.*

1875. Caratomides, Subtribus, Thomson, Hym. Skand., IV., p. 216.

1878. Caratomides, Subtribus, Thomson, *opus cit.*, V., p. 44.

This group is based upon the genus *Cratomus* Dalman, established in 1820. Later the genus was changed to *Caratomus.* I have however, retained the original spelling and shall call the group *Cratomini.*

Haliday thought *Cratomus* was allied to the *Perilampidæ* and placed it in that family, an unnatural position for it. It is a true *Pteromalid* and falls into the subfamily *Sphegigasterinæ*, as is abundantly proved by the discovery of my genus *Paracaratomus*.

Nothing is positively known of the habits of this minor group, but I suspect that the group is parasitic upon the larvæ of beetles.

TABLE OF GENERA.

Head cornuted in front; face with converging striæ below the insertion of the antennæ; abdomen short, subsessile or briefly petiolate.................. **Cratomus** Dalman (type *Cynips megacephalus* Fabr.).

Head not cornuted; face with converging striæ below the insertion of the antennæ; abdomen longly petiolate, the body subcompressed towards apex, the petiole nearly twice as long as the hind coxæ. **Paracaratomus** Ashmead (type *P. cephalotes* Ashm.).

SUBFAMILY IV. SPALANGIINÆ.

1840. Spalangiides, Subfamily? (partim), Westwood, Intro. Mod. Class. Ins., II., Synop., p. 66.

1856. Spalangoidæ, Familie 6 (partim), Förster, Hym. Stud., II., pp. 18, 22 and 40.

1875. Spalangiina, Tribus (partim), Thomson, Hym. Skand., IV., pp. 12 and 206.

1886. Spalangiinæ, Subfamily (partim), Howard, Ent. Amer., I., p. 198.

1897. Spalangiinæ, Subfamily IV., Ashmead, Proc. Ent. Soc. Washington, IV., p. 248.

This subfamily is quite distinct from all of the others here defined by the peculiar oblong shape of the head, a character found in no other family in the Chalcidoidea, except in the family *Agaonidæ*, although not uncommon among the Aculeales, especially in the superfamily Vespoidea, the oblong head being one of the principal characters that distinguishes the family *Bethylidæ*; it is also reproduced in the *Chrysididæ* and occasionally in two or three other families.

Dr. Förster and others incorrectly placed here the genus *Asaphes* Walker (= *Isocratus* Förster); it is a genuine *Pteromaline*.

The subfamily *Spalangiinæ* is readily distinguished by the oblong shape of the head, by the antennæ being inserted far anteriorly close to the mouth, by the longer more depressed thorax, by the shape of the pronotum, by the petiolated abdomen, and by the venation of the front wings, the costal cell being long and exceedingly narrow.

The species of *Spalangia* are parasitic on dipterous larvæ. The species in the other genera, according to the records, destroy coleopterous larvæ.

TABLE OF GENERA.

1. Females.. 2
   Males.. 5

2. Head tridentate, with deep antennal furrows; a sharp, high carina or spine between the antennæ; marginal vein long.. 3
   Head normal, not tridentate.. 4
3. Head *with* a long spear-like process; mandibles very large, three fourths the length of the head; antennæ 10-jointed..............................**Paralæsthia** Cameron (type *P. mandibularis* Cam.).
   Head *without* a long, spear-like process; mandibles not large; antennæ 9-jointed, sometimes apparently only 8-jointed, two of the terminal joints being closely united, without a visible suture between.
   Cerocephala Westwood (type *C. cornigera* Westw.).
4. Facial impression wanting; antennæ 10-jointed, inserted close to the mouth border..**Spalangia** Latreille (type *S. nigra* Latr.).
   Facial impressiom distinct; antennæ 9-jointed, inserted just above the clypeus.
   Paraspalangia Ashmead, g. nov. (type *P. annulipes* Ashm.).
5. Head not tridentate, normal.. 6
   Head tridentate, with deep antennal furrows and a long spine or sharp carina between.............. 7
6. Mandibles very large, three fourths the length of the head; antennæ 10-jointed. .**Paralæsthia** Cameron.
   Mandibles normal, not large; antennæ 11 or 12-jointed.......................**Cerocephala** Westwood.
7. Facial impression wanting; antennæ 12-jointed...................................**Spalangia** Latreille.
   Facial impression distinct; antennæ (?) 10-jointed (broken)..................**Paraspalangia** Ashmead.

SUBFAMILY V. DIPARINÆ.

1875. Diparides, Subtribus, Thomson, Hym. Skand., IV., 1875, p. 217.

1886. Diparides, Tribe, Howard, Ent. Amer., II., pp. 33 and 35.

1897. Diparinæ, Subfamily V., Ashmead, Proc. Ent. Soc. Washington, IV., p. 236.

The peculiarities in the venation of the front wings alone will distinguish this subfamily, although there are other characters not easily defined. The marginal vein is very long, as long, or nearly, as the subcostal vein, the costal cell being exceedingly narrow, the postmarginal vein is also long.

The head in front is convex or subconvex, not depressed, the antennæ being usually long and inserted on the middle of the face, the scape long and slender, the funicle 6-jointed, the club stouter and 3-jointed. The metathorax is longer than usual, with distinct lateral carinæ, while the abdomen is ovate, somewhat depressed, and distinctly petiolate.

The species are rare and only two genera have been characterized.

TABLE OF GENERA.

1. Females.. 2
   Males.. 4
2. Petiole linear, longer than the hind coxæ.. 3
   Petiole shorter than the hind coxæ.
   Abdomen oval; antennæ 13-jointed, subclavate, inserted near the middle of the face, the joints of the funicle stout, subequal, very gradually shortening................**Panstenon** Walker (type *Miscogaster oxylus* Walk.).

3. Abdomen ovate; metathorax large, with delicate, irregular raised lines; second abdominal segment large, occupying fully one third or more of the whole surface of abdomen, the following segments short, subequal.......................................**Dipara** Walker (type *D. petiolata* Walk.).
4. Petiole linear, longer than the hind coxæ.. 5
   Petiole shorter, not longer than the hind coxæ.
   Antennæ filiform, not verticellate, pilose................................**Panstenon** Walker.
5. Antennæ with the joints of the flagellum well separated, subpedunctate and somewhat verticellate-pilose; body of abdomen oval or rounded, the second segment occupying fully one half the whole surface..**Dipara** Walker.

FAMILY LXX. ELASMIDÆ.

1840. Eulophides, Subfamily 5 (partim), Westwood, Intro. Mod. Class. Ins., II.; Synop., p. 73.
1846. Eulophidæ, Family II. (partim), Walker, List Chalc. Brit. Museum, I., p. 61.
1856. Elasmoidæ, Familie 17, Förster, Hym. Stud., II., pp. 19, 25 and 71.
1878. Elasmina, Tribus, Thomson, Hym. Skand., V., p. 180.
1886. Elasminæ, Subfamily, Howard, Ent. Amer., I., p. 198.
1897. Elasmidæ, Family LXX., Ashmead, Proc. Ent. Soc. Washington, IV., p. 236.

This family is not closely allied to any other, although, on account of the 4-jointed tarsi, and the flabellate antennæ in the males, it deceptively resembles the family *Eulophidæ*. Structurally, however, the two families are totally distinct, the thorax, the front wings, the legs and the abdomen being quite different in these families.

In mesothoracic and abdominal characters the *Elasmidæ* show some affinity with the *Encyrtidæ*, but the relationship, if it ever existed, must have been very remote, in ages past, and it is not now traceable in the forms thus far discovered.

The group is easily recognized by the compressed, triangular shape of the body and abdomen, by the longer and narrower wings, by the venation, the marginal vein being usually, although not always, very long, with the stigmal vein very short, and by the abnormally developed legs, the hind coxæ being very large, strongly compressed, disk-like, the hind femora being rather stout, the tibiæ and tarsi being very slender, the latter being very long.

The species of *Elasmus* attack usually lepidopterous larvæ, but some have also been bred from microgasterid cocoons and from other insects. The Australia genus *Euryischia* Howard, attacks dipterous larvæ.

TABLE OF GENERA.

1. Females... 2
   Males... 3

2. Marginal vein shorter than the subcostal vein, the stigmal vein long, well developed; hind tibiæ armed with many long bristles . . . . **Euryischia** Howard (type *E. lestophoni* How.).
   Marginal vein very long, much longer than the subcostal, the stigmal vein minute; hind tibiæ unarmed, without long bristles. . . . . **Elasmus** Westwood (type *Eulophus flabellatus* Fonsc.).
3. Marginal vein shorter than the subcostal, the stigmal vein long, well developed; antennæ simple, without branches . . . . **Euryischia** Howard.
   Marginal vein very long, longer than the subcostal, the stigmal vein very short; antennæ with *three* branches . . . . **Elasmus** Westwood.

FAMILY LXXI. EULOPHIDÆ.

1840. Eulophides, Subfamily 5 (partim), Westwood, Intro. Mod. Class. Ins., p. 166; Synop., p. 73.
1843. Eulophini, Subfamily (partim), Haliday, Trans. Ent. Soc. London, III., p. 296.
1856. Myinoidæ, Familie 3 (partim), Förster, Hym. Stud., II., pp. 18, 21 and 30.
1856. Elachistoidæ, Familie 18 (partim), Förster, Hym. Stud., II., pp. 19, 26 and 72.
1856. Eulophoidæ, Familie 19 (partim), Förster, Hym. Stud., II., pp. 19, 26 and 74.
1856. Entedonoidæ, Familie 20 (partim), Förster, Hym. Stud., II., pp. 19, 26 and 78.
1856. Tetrastichoidæ, Familie 21 (partim), Förster, Hym. Stud., II., pp. 19, 26 and 83.
1878. Tetrastichina, Tribus (partim), Thomson, Hym. Skand., V., p. 180.
1885. Tetracampinæ, Subfamily (partim), Howard, Ent. Amer., I, p. 198.
1886. Tetracampinæ, Subfamily (partim), Howard, Ent. Amer., II., p. 98.
1900. Eulophidæ, Family LXXI., Ashmead, Proc. U. S. National Museum, XXIII., p. 203.

This very large family, which comprises mostly very small species, is separated from all the previously described families, except the *Elasmidæ*, by thoracic and pedal characters, and to a great extent also by venational peculiarities impossible to describe in detail to any except to those who have a thorough knowledge of the various families.

The principal points to be noted, however, are the axillæ which are advanced forward into the basal region of the parapsides, *on* or *before* an imaginary line drawn from tegula to tegula, a character found in none of the foregoing families, except the *Elasmidæ* which is too obviously distinct in many other ways to require specification again.

Five distinct subfamilies may be recognized by the aid of the following table:

TABLE OF SUBFAMILIES.

1. Submarginal vein entire, not distinctly broken, or interrupted before uniting with the marginal vein, and usually distinctly longer than the marginal; stigmal vein long, distinct, rarely very short, the postmarginal vein always present 3

Submarginal vein broken, or interrupted before uniting with the marginal vein, and most frequently, but not always, very short; stigmal vein not or rarely long, usually very short, the knob most frequently subsessile or subpetiolate, the postmarginal most frequently wanting or very short, rarely long 2

2. Submarginal vein very short, the marginal vein very long, the postmarginal vein variable, often very short or only slightly developed; metapleura very small; abdomen often petiolate, but sometimes sessile or subsessile ....Subfamily I. ENTEDONINÆ.

Submarginal vein not very short, usually longer than the marginal, the postmarginal vein *always* wanting; abdomen usually sessile, rarely petiolate.

Stigmal vein very short, nearly obsolete, its knob sessile or subsessile; mesopleura usually without a femoral furrow ....Subfamily II. APHELININÆ.

Stigmal vein distinct, never subsessile, usually long; mesopleura always with a distinct femoral furrow ....Subfamily III. TETRASTICHINÆ.

3. Mesonotum with the parapsidal furrows complete, distinct, entire......Subfamily IV. ELACHERTINÆ.

Mesonotum with the parapsidal furrows wanting or incomplete, at the most only slightly indicated anteriorly ....Subfamily V. EULOPHINÆ.

SUBFAMILY I. ENTEDONINÆ.

1897. Entedoninæ, Subfamily I., Ashmead, Proc. Ent. Soc. Washington, IV., p. 236.

The usually very long marginal vein, the usually very short stigmal vein, which is rarely long, the very small metapleura, and peculiarities in the shape of the head and abdomen, impossible to describe in detail, but which the trained eye recognizes at once, must be depended upon to distinguish the group.

The subfamily may be divided into *four* distinct tribes or minor groups.

TABLE OF TRIBES.

1. Tarsi in both sexes 4-jointed; funicle 5-jointed or less; antennæ 10-jointed or less.................... 2

Tarsi in female 5-jointed, rarely heteromerous, in male 4-jointed; funicle 6-jointed; antennæ 11-jointed or more, never 10-jointed or less ....Tribe I. Tetracampini.

2. Parapsidal furrows complete, distinct.

Abdomen sessile or subsessile, never distinctly petiolate....................Tribe II. Omphalini.

Abdomen distinctly petiolate....................Tribe III. Entedonini.

Parapsidal furrows incomplete, at the most indicated only anteriorly............Tribe IV. Pediobiini.

TRIBE I. TETRACAMPINI.

1856. Tetracampoidæ, Familie, Förster, Hym. Stud., II., p. 79.

1878. Tetracampina, Tribus, Thomson, Hym. Skand., V., p. 181.

This tribe approaches nearest to the *Omphalini;* the body is rather narrow and elongate, the abdomen in the female being usually longer than the head and thorax united and conically produced or conic-ovate; while the marginal vein is very long, the stigmal vein minute. In the females the tarsi are 5-jointed or heteromerous, in the males 4-jointed. The antennæ are 11-, 12- or 13-jointed, with 1 or 2 ring-joints, the funicle being 6-jointed.

In the other tribes the tarsi are 4-jointed in both sexes, the antennæ having at the most 10 joints, while the funicle is from 2- to 5-jointed.

The members of this tribe attack principally coleopterous larvæ.

TABLE OF GENERA.

1. Females; tarsi 5-jointed or heteromerous 2
Males; tarsi 4-jointed 6
2. Antennæ 12- or 13-jointed, with 1 or 2 ring-joints 3
Antennæ 11-jointed, without a ring-joint 5
3. Antennæ 12-jointed; mesonotal furrows distinct 4
Antennæ 13-jointed, with 2 ring-joints, the scape slender, the club 3-jointed, the funicle 6-jointed, the joints long, cylindrical; mesonotal furrows wanting.
Platynocheilus Westwood (type *P. erichsonii* Westw.).
4. Antennæ with the scape stout, the flagellum filiform, the joints cylindrical; stigmal vein very short with a very small knob .... **Tetracampe** Förster (type *Entedon panyas* Walk.).
Antennæ with the scape slender, the flagellum subclavate, the joints except 5 and 6 a little longer than thick; stigmal vein short but with a rather large rounded knob... **Plutothrix** Förster (type unknown).
5. Scape not thick, the pedicel about as long as funicle-joints 1 and 2 united, the fifth joint stout; pronotum as long as the mesonotum, the axillæ widely separated; metanotum *without* a median carina.
Försterella Dalla Torre (type *Hyperbius flavipes* Först.).
6. Antennæ 11- or 12-jointed; marginal vein normal 7
Antennæ 13-jointed; marginal vein broad and stout .... **Platynocheilus** Westwood.
7. Antennæ 11-jointed 8
Antennæ 12-jointed.
Flagellum not verticillate-pilose; stigmal vein with a minute knob .... **Tetracampe** Förster.
Flagellum verticillate-pilose; stigmal vein with rather a large knob .... **Plutothrix** Förster.
8. Antennæ with the scape broad, the pedicel long, the flagellum normal; stigmal vein very short.
Försterella Dalla Torre.

TRIBE II. *Omphalini.*

Many of the species falling in this tribe strongly resemble some in the *Tetracampini,* in venation, in the shape of the body and in often having the abdomen conically produced, the only appreciable difference being in the antennæ; these are never more than 10-jointed, and the funicle is at the most 5-jointed, often 2-, 3- or 4-jointed.

The habits of the species, if the records are correct, are diverse. Some attack the larvæ of Coleoptera, while others attack those of Diptera, Lepidoptera, etc.

I am inclined to think, however, that these records in some cases are wrong and most of them will be found to be parasitic only on dipterous larvæ, since, where the records conflict, Diptera are usually associated with the Coleoptera and Lepidoptera, either as parasites or living together in the same plant. In breeding parasites one cannot always ascertain, with absolute certainty, the host of the parasites.

Species belonging to the genus *Astichus* Förster are bred from fungi infested with dipterous and coleopterous larvæ.

TABLE OF GENERA.

1. Females.. 2
   Males.. 11
2. Antennæ 10-jointed, with *one* ring-joint (scape, pedicel, a ring-joint, a 4-jointed funicle and a 3-jointed club).. 3
   Antennæ 9-jointed, with *one* ring-joint, or less than 9-jointed.................... 9
3. Wings hyaline, immaculate.. 4
   Wings banded or maculate with fuscous.
      Antennæ very long, the flagellum subclavate; abdomen conically pointed; postmarginal vein short, the knob of the stigmal vein petiolate...**Astichus** Förster (type *A. arithmetricus* Först.).
4. Abdomen long, conically produced, as long or longer than the head and thorax united 5
   Abdomen short, ovate or cordate and usually shorter than the thorax, never much longer.......... 8
5. Metanotum short, *without* carina or at the most with only a trace of a median carina.............. 6
   Metanotum long, distinctly tricarinate, the surface punctulate or rugulose.
      Flagellum stout, subclavate, finely pubescent; abdomen not longer than the head and thorax united or only a little longer..**Selitrichus** Roudani.
6. Metanotum smooth, impunctate.. 7
   Metanotum punctate or sculptured.
      Wings almost glabrous, the short pubescence arranged in hair lines, usually conforming to the spurious veins; postmarginal vein well developed.......................**Secodes** Forster.
7. Front wings well pubescent; postmarginal vein well developed, long.
      Eyes not large, the malar space distinct; scape of antennæ metallic or metallic except at base. **Euderus** Haliday (type *Entedon amplus* Walk.).
      Eyes very large, pubescent, occupying the whole side of the head and extending to the base of the mandibles, the malar space wanting; scape very slender, white. **Euophthalmomyia** Ashmead, g. nov. (type *E. pallidipes* Ashm.).
   Front wings almost glabrous, not well pubescent, the pubescence arranged in more or less irregular hair-lines, as in *Secodes;* postmarginal vein not well developed, not or scarcely longer than the very short subsessile stigmal vein; eyes normal, the malar space distinct. **Omphale** Haliday (type *O. salicis* Hal.).
8. Wings bare or nearly, the stigmal vein rather long, the postmarginal vein not developed.
      Flagellum subclavate, not long, the pedicel long, obconical, the funicle 4-jointed, joints 3 and 4 wider than long; head lenticular, wider than the thorax; parapsidal furrows sharply defined posteriorly, wanting at anterior third; metathorax short, punctate, with a median carina; abdomen short cordate........ **Hubbardiella** Ashmead, g. nov. (type *H. arizonensis* Ashm.).
9. Antennæ 8-jointed with a ring-joint.. 10
   Antennæ 9-jointed, with a ring-joint, the funicle 3-jointed, the club 3-jointed, the terminal joint usually represented by a spur; wings immaculate, or at most with a substigmal fascia; metathorax smooth, without a median carina or lateral folds, but with spiracular sulci; abdomen not or scarcely longer than the head and thorax united.

Malar space distinct, the eyes not extending to the base of the mandibles; postmarginal vein very long...**Chrysocharis** Förster.

Malar space wanting, the eyes large and extending to the mandibles; postmarginal vein very long, the stigmal vein subsessile and usually with a fuscous fascia from apex.

Zaommomyia Ashmead, g. nov. (type *Chrysocharis stigmata* Ashm.).

10. Wings usually with transverse fasciæ, the postmarginal vein not well developed; head wider than long; flagellum short, compressed, fusiform, the joints except the last wider than long.

Closterocerus Westwood (type *C. trifasciatus* Westw.).

11. Antennæ 10-jointed, with *one* ring-joint...12

Antennæ 9-jointed, with *one* ring-joint or less...16

12. Wings immaculate...13

Wings maculate.

Antennæ very long, verticillate-pilose, the funicle joints subdentate.........**Astichus** Förster.

13. Metanotum short, usually without a median carina...14

Metanotum not short, tricarinate.

Antennæ filiform...**Selitrichus** Rondani.

14. Metanotum smooth, impunctate...15

Metanotum punctate or sculptured.

Wings subglabrous, the faint pubescence arranged in hair-lines; postmarginal vein well developed, longer than the stigmal...**Secodes** Förster.

15. Front wings finely pubescent; postmarginal vein long, well developed.

Eyes not large, the malar space distinct; scape of antennæ metallic.........**Euderus** Haliday.

Eyes very large, occupying the whole sides of the head, the malar space wanting; scape of antennæ very slender, white..................................**Euophthalmomyia** Ashmead.

Front wings subglabrous, not well pubescent, the pubescence arranged usually in more or less irregular hair-lines; postmarginal vein not well developed, rarely longer than the very short stigmal vein.

Head normal, not wider than the thorax; stigmal vein very short, the knob sessile or subsessile; parapsidal furrows complete; abdomen long..........................**Omphale** Haliday.

Head very broad, lenticular, wider than the thorax; stigmal vein rather long; parapsidal furrows obliterated anteriorly....................................**Hubbardiella** Ashmead.

16. Antennæ 8-jointed, with *one* ring-joint...17

Antennæ 9-jointed, with *one* ring-joint, the funicle 3-jointed.

Eyes normal, the malar space distinct..................................**Chrysocharis** Förster.

Eyes very large, extending to base of mandibles, the malar space wanting.

Zaommomyia Ashmead.

17. Wings with a marginal fringe, often with transverse bands, the stigmal vein clavate, longer than the postmarginal...**Closterocerus** Westwood.

TRIBE III. *Entedonini.*

This tribe is easily distinguished from the *Omphalini* by the distinctly petiolate abdomen, and from the *Pediobiini* by the complete parapsidal furrows.

TABLE OF GENERA.

1. Females...2

Males...14

2. Scutellum *without* lateral longitudinal grooved lines, at the most with a single median furrow....... 7

   Scutellum *with* lateral longitudinal grooved lines.

      Antennæ 10-jointed, with only *one* ring-joint, or less than 10-jointed, the ovipositor never prominent.......... 4

      Antennæ 10-jointed, with *two* ring-joints, the ovipositor very long, longer than the abdomen; flagellum very long, the funicle 4-jointed, the joints long, swollen at base and tapering off at apex, the swollen portion with whorls of long hairs.

      Uroentedon Ashmead, g. nov. (type *U. verticellata* Ashm.).

4. Head normal, viewed from in front not or scarcely wider than long; stigmal vein short........... 7

   Head abnormal, viewed from in front very short, twice as wide as long or even wider; stigmal vein long.......... 5

5. Eyes pubescent; wings with the disk usually subfuscous, but not banded; antennæ 10-jointed, subclavate.......... 6

   Eyes bare; wings with two fuscous transverse bands; antennæ 10-jointed, long, the flagellum long, subclavate, the funicle 4-jointed, the joints longer than thick; cylindrical; prothorax conical; parapsides prominently convex...................... **Hoplocrepis** Ashmead (type *H. albiclava* Ashm.).

6. Funicle 3-jointed, the joints cylindrical, slightly pedicellate, the club 4-jointed, black or brown-black, not white; metanotum smooth, without a median carina.

   Eulophopteryx Ashmead, g. nov. (type *E. chapadæ* Ashm.).

   Funicle 3-jointed, the joints compressed, briefly pedicellate, the club 4-jointed, white or yellowish white; metanotum with a median carina.

   Lophocomus Haliday (type *Cirrospilus anaitis* Walk.).

7. Scutellum *without* a median longitudinal grooved line.......... 8

   Scutellum *with* a median longitudinal grooved line.

      Antennæ 10-jointed, with one ring-joint, the flagellum filiform, pubescent, the funicle 4-jointed, the joints long, cylindrical; abdomen with a long petiole.

      Holcopeltoideus Ashmead, g. nov. (type *Holcopelte petiolata* Ashm.).

      Antennæ 9-jointed, with one ring-joint, usually subclavate, the funicle 3-jointed, the joints oblong-oval or submoniliform; abdomen with a short petiole.

      Horismenus Walker (type *H. cleodora* Walk.).

8. Antennæ 9-jointed, with one ring-joint or less than 9-jointed.......... 10

   Antennæ 10-jointed, with one ring-joint.

      Metathorax *without* lateral carinæ.......... 9

      Metathorax *with* lateral carinæ and a median carina, the latter usually forked at apex.

         Body of abdomen ovate, the first segment occupying about one third the whole surface.

         Pleurotropis Förster (type *P. isomera* Först.).

9. Metathorax produced into a long neck at apex, with a delicate median carina at base.

      Head very wide, lenticular, much wider than the thorax, concave behind; flagellum filiform, the funicle 4-jointed; postmarginal vein not developed; abdomen with a long petiole.

      Pelorotelus Ashmead, g. nov. (type *P. cæruleus* Ashm.).

10. Antennæ 8-jointed, with one ring-joint, or less than 8-jointed.......... 13

   Antennæ 9-jointed, with one ring-joint, the funicle 3-jointed, the club 3-jointed, the last joint usually represented by a little spur.

      Metathorax *without* lateral carinæ.......... 11

      Metathorax *with* lateral carinæ.............. **Mestocharis** Förster (type *M. cyclopsila* Först.).

11. Scutellum not smooth, scaly punctate, or finely reticulately punctate.......................... 12

Scutellum perfectly smooth, impunctate..................**Asecodas** Förster (type *A. fuscipes* Först.).

12. Head very broad, much wider than the thorax, the occiput concave; metanotum with a median carina connected with a transverse carina *at* apex, the spiracles in depressions, large and oval.

Entedon Dalman (type *E. cyanellus* Dalm.).

Head not so broad, not or scarcely wider than the thorax; metanotum with a delicate median carina connected with a transverse carina *before* the apex, the same a little curved on each side from the apex of the median carina, the spiracles small, short oval or rounded........**Derostenus** Westwood (type *D. gemmeus* Westw.).

13. Antennæ short and strongly clavate, the funicle 2-jointed, the club large, 3-jointed.

Funicle joints neither small nor annular, distinctly separated; pedicel not large, much narrower than the first joint of funicle......**Rhopalotus** Förster (type *Elachertus cothurnatus* Ratzeb.).

Funicle joints very minute, annular, and closely united with the club; pedicel large.

Chrysoatomus Ashmead, g. nov. (type *C. zealandicus* Ashm.).

14. Scutellum with *two* longitudinal grooved lines.. 15

Scutellum *without* longitudinal grooved lines, or at the most with a median grooved line.......... 19

15. Antennæ 10-jointed or less, with only *one* ring-joint.. 16

Antennæ 10-jointed with *two* ring joints..................................**Uroentedon** Ashmead.

16. Head abnormal, viewed from in front, very short and *twice* as wide as long, or even wider; stigmal vein long.. 17

Head normal, viewed from in front, not or scarcely wider than long.......................... 19

17. Eyes pubescent; wings with a subfuscous discal cloud but not banded; pronotum rounded before. 18

Eyes bare; wings with two transverse fuscous bands; pronotum conical.

Antennæ very long, 10-jointed, the joints of the funicle globose at base, longly petiolate at apex, with whorls of long hairs on the basal portion; sometimes also with short branches on the first three joints of funicle..**Hoplocrepis** Ashmead.

18. Antennæ long, 10-jointed, as in *Hoplocrepis.*

Metanotum *without* a median carina..............................**Eulophopteryx** Ashmead.

Metanotum *with* a median carina...................................**Lophocomus** Haliday.

19. Scutellum *with* a median longitudinal grooved line.. 20

Scutellum *without* a median longitudinal grooved line.. 21

20. Antennæ 10-jointed, the funicle 4-jointed, the joints rather longer, pedicellate at apex, the club 3-jointed.

Holcopeltoideus Ashmead.

Antennæ 9-jointed, the funicle 4-jointed, the joints oval, very briefly pedicellate, the club 2-jointed.

Horismenus Walker.

21. Antennæ 9-jointed, with a ring-joint, or less than 9-jointed.................................. 22

Antennæ 10-jointed, with a ring-joint, the funicle 4-jointed, the joints oblong, very briefly pedicellate, or loosely joined, the club 3-jointed, the last joint represented by a little spur.

Metanotum not short, with lateral carinæ and a median carina; abdomen short oval, the second segment occupying nearly half the whole surface, the following segments after the third very short..**Pleurotropis** Förster.

22. Antennæ 8-jointed or less.. 25

Antennæ 9-jointed.

Metathorax smooth, *without* lateral carinæ.. 23

Metathorax *with* lateral carinæ, the median carina also usually present.

Flagellum short, stout, subclavate, the funicle 3-jointed, joints 2 and 3 not longer than thick, the club stouter, ovate.................................**Mestocharis** Förster.

23. Scutellum never smooth, always punctate, scaly-punctate or reticulate; metanotum more or less shagreened or punctate.. 24

Scutellum always smooth, impunctate; metanotum smooth, not sculptured.

Flagellum subfiliform, much stouter than the small pedicel, the funicle 3-jointed, the joints loosely joined or briefly pedicellate, postmarginal vein short ....**Asecodes** Förster.

24. Flagellum filiform, the funicle 3-jointed.

Metanotum with a transverse carina at apex; postmarginal vein short.......**Entedon** Dalman.

Metanotum with a tranverse carina a little before the apex; postmarginal vein long. **Derostenus** Westwood.

25. Antennæ short, strongly clavate, pubescent.

Pedicel not large, narrower than the first joint of the funicle.............**Rhopalotus** Förster.

Pedicel very large, stouter than the first joint of the funicle.........**Chrysoatomus** Ashmead.

Tribe IV. *Pediobiini.*

In this tribe are found some of the smallest members of the subfamily. It is distinguished from the other tribes by having the mesonotal furrows incomplete or wholly wanting, at the most indicated by a slight depression posteriorly, but not by grooved lines. In the other tribes the mesonotal or parapsidal furrows are usually complete and always sharply defined, the mesonotum being distinctly trilobed.

All of the species falling in this group, or tribe, are, I think, hyperparasites and attack other members of the *Entedoninæ*, as well as members of other groups, and more particularly species in the *Eulophinæ*; they are the cannibals of the *Eulophidæ*, since they attack and devour almost any member of the family, the species of the genus *Eulophus* particularly being most frequently devoured by them.

TABLE OF GENERA.

1. Females.. 2

Males.. 8

2. Abdomen sessile or subsessile, the petiole very short.................................... 3

Abdomen distinctly petiolate.

Head lenticular, wider than the thorax; abdomen conically pointed, the second segment large, occupying most of the surface; antennæ 8-jointed (or 9-jointed with a ring-joint), the funicle 3-jointed, the joints oval, loosely joined or subpedunculate; postmarginal vein very short. **Paracrias** Ashmead, g. nov. (type *P. laticeps* Ashm.).

3. Ovipositor not exserted.. 4

Ovipositor exserted, the length of the abdomen.

Wings with long marginal cilia, the postmarginal vein long, the stigmal vein short; head transverse; antennæ? (broken, probably 8-jointed) ....**Uroderostenus** Ashmead, g. nov. (type *U. pleuralis* Ashm.).

4. Wings with long marginal cilia.. 5

Wings with short marginal cilia.. 6

5. Marginal vein very long.

Stigmal vein long; antennæ 8-jointed (or 9-jointed with a ring-joint), the funicle 3-jointed, the joints longer than thick .... **Chrysonotomyia** Ashmead, g. nov. (type *Eulophus auripunctatus* Ashm.).

Stigmal vein short; antennæ 9-jointed, with a ring-joint, the flagellum filiform, tapering off at apex, and furnished with long, sparse hairs, the funicle 3-jointed; abdomen long, conic-ovate. **Ametallon** Ashmead, g. nov. (type *A. chapadæ* Ashm.).

6. Antennæ 7-jointed (or 8-jointed with a ring-joint), if 9-jointed the head not especially large 7

Antennæ 8-jointed (or 9-jointed with a ring-joint); head large, wider than the thorax.

Flagellum slender, filiform, clothed with some long, sparse hairs, the funicle and club each 3-jointed; head large, much wider than the thorax; wings with one or two fuscous fasciæ; abdomen conic-ovate, the second segment occupying scarcely half the whole surface. **Acrias** Walker (type *A. nileus* Walker).

7. Stigmal vein usually very short, the knob sessile or subsessile.

Thorax and scutellum smooth, impunctate; antennæ 8-jointed, with a ring-joint, not tapering toward apex, the joints of the funicle submoniliform. **Pediobius** Walker (type *Entedon cædicius* Walk.).

Thorax and scutellum with a scaly punctation; antennæ 9-jointed with a ring-joint, tapering off at apex, the joints of the funicle not submoniliform. **Nesomyia** Ashmead, g. nov. (type *N. albipes* Ashm.).

8. Abdomen sessile or subsessile.. 9

Abdomen distinctly petiolate.

Antennæ 9-jointed with one ring-joint .... **Paracrias** Ashmead.

9. Wings with short marginal cilia.. 10

Wings with long marginal cilia.

Stigmal vein short.

Non-metallic.. **Ametallon** Ashmead.

Metallic.. **Uroderostenus** Ashmead.

Stigmal vein long .... **Chrysonotomyia** Ashmead.

10. Antennæ 8-jointed (or 9-jointed with a ring-joint)................................ **Acrias** Walker.

Antennæ 7-jointed (or 8-jointed with a ring-joint)................................ **Pediobius** Walker.

SUBFAMILY II. APHELININÆ.

1856. Myinoidæ, Familie, 3, Förster, Hym. Stud., II., pp. 18, 21 and 30.
1875. Aphelinina, Tribus, Thomson, Hym. Skand., IV., pp. 12, 183.
1886. Aphelininæ, Subfamily, Howard, Ent. Amer., I., p. 198.
1897. Aphelininæ, Subfamily, II., Ashmead, Proc. Ent. Soc. Washington, IV., p. 236.

Many authorities have treated this group as allied to the *Encyrtidæ*, and usually place it next to that family, with which it has no affinity whatever. It is clearly a component of the *Eulophidæ*, where Dalman first placed it, as is shown by the structural characters of the mesothorax.

An excellent reversion of the group has been given by Dr. L. O. Howard, in Technical Series No. 1. U. S. Department of Agriculture, where most of the genera have been fully described and figured.

TABLE OF TRIBES.

Tarsi 5-jointed.......................Tribe I. Aphelinini.
Tarsi 4-jointed.......................Tribe II. Pteroptricini.

TRIBE I. *Aphelinini.*

The *five*-jointed tarsi distinguish the tribe. The majority of the species confine their attacks to various genera of scale-insects, or bark-lice, belonging to the family *Coccidæ*. A few, however, in the genus *Aphelinus*, while usually bred from *Coccidæ*, also attack plant-lice belonging to the family *Aphididæ*. All the species, except probably the latter, which may be hyperparasitic on some *Encyrtinæ*, are supposed to be primary parasites, and are of the greatest importance in destroying the destructive bark-lice (*Coccidæ*).

TABLE OF GENERA.

1. Females....................... 2
   Males....................... 19
2. Wingless forms....................... 18
   Winged.
      Front wings *with* a hairless oblique line extending from the marginal vein towards the base of the wing; antennæ 5- or 6-jointed....................... 12
      Front wings *without* such a line.
         Antennæ 8-jointed....................... 3
         Antennæ 3-jointed....................... 11
3. Club of antennæ 3-jointed....................... 4
   Club of antennæ 1- or 2-jointed....................... 8
4. Wings with a short marginal fringe....................... 5
   Wings with a long marginal fringe....................... 7
5. Stigmal vein short but distinct, always present.
      Marginal vein as long as, or longer than, the subcostal vein....................... 6
      Marginal vein much shorter than the subcostal vein.
         Prospalta Howard (type *P. murtfeldti* How.).
6. Flagellum strongly compressed, the first joint of the funicle about twice as long as the pedicel, the following shortening; hind tibiæ flat, with short stiff bristles behind.
      Aneristus Howard (type *A. ceroplastæ* How.).
   Flagellum not compressed, subcylindrical, the first joint of funicle not twice as long as the pedicel. hind tibiæ normal, without short, stiff bristles behind.
      Coccophagus Westwood (type *C. pulchellus* Westw.).
7. Stigmal vein absent.......................**Aspidiotiphagus** Howard (type *Coccophagus citrinus* Craw.).
8. Club of antennæ 2-jointed....................... 9
   Club of antennæ 1-jointed....................... 10
9. Abdomen, seen from above, short, oval, depressed, beneath boat-shaped or carinate; hind tibiæ normal.......................**Encarsia** Förster (type *E. tricolor* Först.).
   Abdomen, seen from above, subovate, flat, beneath subconvex; hind tibiæ behind armed with stiff bristles.......................**Myiocnema** Ashmead (type *M. comperei* Ashm.).
10. Abdomen short, depressed, not boat-shaped beneath, ending in a prominent ovipositor.
      Ablerus Howard (type *Centrobia clisiocampæ* Ashm.).

11. Front wings with long marginal cilia, dusky on basal half; club, or terminal joint of the 3-jointed antennæ, very long .... **Thysanus** Haliday (type *T. ater* Hal.).

12. Antennæ 6-jointed 13

Antennæ 5-jointed 17

13. Antennæ with the three joints before the club *unequal* in length 14

Antennæ with the three joints before the club *equal* in length .... **Mesidia** Förster.

14. Ovipositor prominently exserted 15

Ovipositor not at all, or at most only slightly, exserted; wings hyaline .... **Aphelinus** Dalman (type *Entedon abdominalis* Dalm.).

15. Wings not wholly hyaline, maculate, or with rounded fuscous spots 16

Wings hyaline; with a brown band; post-scutellum abnormal, extending to the base of the abdomen; ovipositor prominent, ⅓ the length of the abdomen....... **Centrodora** Förster (type *C. amœna* Först.).

16. Wings hyaline, with rounded, fuscous spots...... **Marietta** Motschulsky (type *M. leopardina* Motsch.).

Wings strongly maculate, with broad irregular fuscous bands and spots of a peculiar pattern.
Perissopterus Howard (type *Aphelinus pulchellus* How.).

17. Ovipositor exserted; mandibles 3-dentate....... **Physcus** Howard (type *Coccophagus varicornis* How.).

18. Antennæ 6-jointed .... **Aphelinus** Dalman.

19. Front wings with a hairless oblique line; antennæ 5- or 6-jointed 25

Front wings without such a line.

Antennæ 8-jointed 20

Antennæ 3-jointed.

Wings with long marginal cilia .... **Thysanus** Haliday.

20. Front wings with the marginal cilia short 21

Front wings with the marginal cilia long 23

21. Marginal vein much shorter than the subcostal vein 22

Marginal vein as long as or longer than the subcostal vein.................. **Coccophagus** Westwood.

22. Hind tibiæ not armed with stiff bristles behind .... **Prospalta** Howard.

Hind tibiæ armed with stiff bristles behind .... **Myiocnema** Ashmead.

23. Front wings broadly rounded at apex, the stigmal vein present.................................. 24

Front wings narrowed and pointed at apex, the stigmal vein absent........ **Aspidiotiphagus** Howard.

24. Unknown .... **Ablerus** Howard.

.... **Encarsia** Förster.

25. Antennæ 6-jointed 26

Antennæ 5-jointed.

26. Antennæ with the three joints before the club of an *unequal* length.................................. 27

Antennæ with the three joints before the club of an equal length .... **Mesidia** Förster.

27. Wings not wholly hyaline 28

Wings wholly hyaline .... **Aphelinus** Dalman.

28. Wings with rounded fuscous spots or strongly maculate with fuscous bands and irregular spots.... 29

Wings hyaline except a fuscous band .... **Centrodora** Förster.

29. Wings with rounded fuscous spots .... **Marietta** Motschulsky.

Wings strongly maculate with broad irregular fuscous bands and spots of a peculiar pattern.
Perissopterus Howard.

TRIBE II. *Pteroptricini.*

This tribe is separated from the former by having 4-jointed tarsi, not five. It forms a transition, or a connecting link, between the subfamilies *Aphelininæ* and the *Tetrastechinæ*, some of its members are easily mistaken for some of those of the latter.

The very short, or nearly obsolete, stigmal vein, and the absence of the mesosternal furrow, will, however, readily distinguish them.

The species attack principally the mealy-winged plant-lice, family *Aleurodidæ*.

TABLE OF GENERA.

1. Females.. 2
Males.. 3
2. Antennæ 8 jointed, normal, the last joint very short. **Pteroptrix** Westwood (type *P. dimidiata* Westw.).
Antennæ 5-jointed, with 2 minute ring-joints, the last joint, or the club, greatly lengthened.
Eretmocera Haldeman (type *E. corni* Haldeman.).
3. Antennæ 8-jointed...**Pteroptrix** Westwood.
Antennæ 3-jointed (or 4-jointed with a ring-joint), the last joint very long. **Eretmocera** Haldeman.

SUBFAMILY III. TETRASTICHINÆ.

1856. Tetrastichoidæ, Familie 21, Förster, Hym. Stud., II., pp. 26 and 83.
1878. Tetrastichina, Tribus, Thomson, Hym. Skand., V., p. 180.
1886. Tetrastichinæ, Subfamily, Howard, Ent. Amer., I., p. 199; II., p. 98.
1897. Tetrastichinæ, Subfamily III., Ashmead, Proc. Ent. Soc. Washington, IV., p. 249.

This subfamily is closely allied to the *Aphelininæ*, and some of the smaller species falling in it, are easily confused with many in the *Aphelinini*, if attention is not given to the difference in the length of the stigmal vein.

TABLE OF TRIBES.

Abdomen distinctly petiolate; hind wings with a long, clavate marginal vein......Tribe I. Ceratoneurini.
Abdomen sessile or subsessile; hind wings with a slender marginal vein..........Tribe II. Tetrastichini.

TRIBE I. *Ceratoneurini.*

The distinctly petiolate abdomen, and the long clavate marginal vein in the hind wings, found in no other tribe, will distinguish the tribe at a glance.

Only one genus is known:

Antennæ 10-jointed, with *two* ring-joints; face with striæ converging towards the mouth.
Ceratoneura Ashmead (type *C. petiolata* Ashm.).

TRIBE II. *Tetrastichini.*

The sessile or subsessile abdomen, and the difference in the venation of the hind wings separate this tribe from the *Ceratoneurini*. The scutellum has usually *four* longitudinal grooved lines, rarely *five*, but never less than *two* longitudinal grooved lines.

The species falling in this group are not restricted in their habits, but attack nearly all orders of insects. They have been bred, according to the records, from the larvæ of Coleoptera, Lepidoptera, Hymenoptera, Diptera, Orthoptera, Neuroptera, Odonata, etc., and appear to be both primary and secondary parasites.

The vast majority of them, however, appear to be primary parasites upon the gall-making or gall-inhabiting insects in the Orders Diptera, Hymenoptera and Coleoptera.

The curious, and in some respects anomalous, genus *Melittobia* Westwood is parasitic in the nests of bees and wasps, and is said to attack not only these insects but also other hymenopterous parasites of the bees and the wasps, *i. e.*, *Monodontomerus*, etc. In this country species have been bred from the nests of bees and wasps, just as in Europe, but here we have *positive* evidence that they came from the puparium of a Dipteron, and I have, therefore, my doubts as to the genus being a primary parasite of bees and wasps.

TABLE OF GENERA.

1. Females 2
   Males... 13
2. Mesonotum *without* a median grooved line.................. 3
   Mesonotum *with* a median grooved line.................... 7
3. Pronotum transverse, *not* conical, or subquadrate or rounded anteriorly.............. 4
   Pronotum long, conical.
      Antennæ 9-jointed, inserted near the mouth border; abdomen longer than the head and thorax united, subcompressed, the ventral valve prominent.................. **Melittobia** Westwood (type *Cirrospilus acasta* Walk.).
4. Antennæ 9-jointed, with *one* ring-joint.................... 6
   Antennæ 10-jointed, with *two* ring-joints.
      Abdomen very long, conically produced, two or more times longer than head and thorax united.................................. 5
      Abdomen not long, either ovate or conic-ovate and not or rarely much longer than the head and thorax united.
         Abdomen above depressed or concave, never cylindrical, either carinate or convex beneath, polished, the segments not subequal.................. **Tetrastichodes** Ashmead (type *T. floridanus* Ashm.).
         Abdomen cylindrical, convex above, never depressed, shagreened or punctate, never smooth, the segments subequal; funicle joints cylindrical, at least twice as long as thick .... **Trichoporus** Förster (type unknown).
5. Metanotum usually very short, with a Λ-shaped median carina, each fork diverging towards the lateral hind angle, more rarely with a straight median carina........................ **Hyperteles** Förster (type *Eulophus elongatus* Förster).

6. Scutellum with *two* longitudinal grooved lines; hind wings acutely pointed; front wings with a long marginal fringe................................ **Gyrolasia** Förster (type *Pteroptrix menes* Walk.).

Scutellum with *four* longitudinal grooved lines; hind wings *not* acutely pointed.

Head and thorax smooth or nearly, at the most only sparsely punctate, metanotum smooth, with a delicate median carina; abdomen rotund or broadly oval, shorter than the thorax but wider.......................... **Syntomosphyrum** Förster (type *Eulophus cyclogaster* Ratz.).

Head and thorax shagreened or punctate, as well as the abdomen; metanotum punctate; abdomen rather long, cylindrical, the segments subequal....... **Trichoporus** Förster (partim).

7. Scape of antennæ normal, neither greatly thickened nor dilated................................ 8

Scape of antennæ abnormal, enormously enlarged, or dilated; antennæ 9-jointed with *one* ring-joint, the funicle 4-jointed.

Front wings with a long marginal fringe; funicle joints short, moniliform.... **Ceranisus** Walker (type *C. pacuvius* Walk.).

Front wings with a short marginal fringe; funicle joints longer than thick. **Baryscapus** Förster (type unknown).

8. Antennæ 10-jointed, with *two* ring-joints, the funicle 3-jointed, the club ovate, 3-jointed......... 9

Antennæ 9-jointed, with *one* ring-joint, or less than 9-jointed................................ 10

9. Abdomen ovate or conic-ovate, rarely, although sometimes, greatly lengthened and conically produced as in *Hyperteles*............................. **Tetrastichus** Haliday (type *Eulophus miser* Nees).

10. Antennæ 9-jointed, with *one* ring-joint.. 11

Antennæ 8-jointed, with *one* ring-joint.. 12

11. Front legs normal, the tibiæ and tarsi long and slender; pronotum not long, rounded before, hardly half the length of the mesonotum; abdomen much elongate, conically produced, subcompressed, with usually a prominent ovipositor; funicle joints much longer than thick...... **Aprostocerus** Westwood (type *A. caudatus* Westw.).

Front legs abnormal, much swollen, the tibiæ short and thick; pronotum large, transverse quadrate, nearly as long as the mesonotum, the front angles a little rounded; body of abdomen oblong, depressed, not longer than the head and thorax united, the ovipositor prominent but not longer than half the length of the abdomen; funicle joints short, not longer than thick, sometimes a little wider than long.................................... **Cratæpus** Förster (type *C. agrisgranensis* Först.).

12. Abdomen ovate, the ovipositor hidden.

Antennæ very short, clavate, the pedicel obconic, thicker and longer than the first two joints of the funicle united, which are small, quadrate; wings with a long marginal fringe.

Pentastichus Ashmead (type *P. xanthopus* Ashm.).

13. Mesonotum *without* a median grooved line.. 14

Mesonotum *with* a median grooved line.. 21

14. Species fully winged.. 15

Apterous or subapterous.

Pronotum long, conical; antennæ 9-jointed, inserted close to the mouth, the scape long, broadly dilated towards apex, the pedicel and first funicle joint dilated, the funicle joints 2–4 small, transverse, the club ovate, 3-jointed........... **Melittobia** Westw.

15. Antennæ 9-jointed with *one* ring-joint.. 16

Antennæ 8-jointed or less.. 20

16. Front wings with a short marginal fringe, the hind wings not acutely pointed at apex............ 17

Front wings with a long marginal fringe, the hind wings acutely pointed at apex. **Gyrolasia** Förster.

17. Abdomen short oval, or rotund, shorter than the thorax.................................... 19

Abdomen elongate, conic-ovate or conical, fully as long as, or longer than, the thorax.

Metanotum not punctate, the abdomen neither cylindrical nor sculptured, the segments not subequal, the head and thorax smooth, not strongly sculptured or closely punctate....... 18

Metanotum very short and punctate, the abdomen cylindrical, sculptured, the segments short, subequal, the head and thorax closely punctate or strongly sculptured...**Trichoporus** Förster.

18. Metanotum very short, smooth, and often without a median carina; if the median carina is present it is united with a transverse apical carina; abdomen not longer than the thorax. **Tetrastichodes** Ashmead.

Metanotum short, with a ʌ-shaped median carina; abdomen very long, conically produced, much longer than the thorax...**Hyperteles** Förster.

19. Species small and short, black or at most æneous black, the abdomen rotund, never ovate or conically pointed...**Syntomosphyrum** Förster.

20. Antennæ 8-jointed, *without* a ring-joint.

Abdomen ovate or conically pointed.

Abdomen short rotund................................**Syntomosphyrum** Förster (partim).

Abdomen not short, ovate, or conic ovate..................**Tetrastichodes** Ashmead (partim).

21. Scape of antennæ normal, neither greatly thickened nor dilated.............................. 22

Scape of antennæ enormously enlarged or dilated.

Front wings with a long marginal fringe; flagellum filiform, slender, with a short pubescence. **Ceranisus** Walker.

Front wings with a short marginal fringe..............................**Baryscapus** Förster.

22. Antennæ 9-jointed, with *one* ring-joint.. 23

Antennæ 8-jointed, with *one* ring-joint.. 25

23. Front legs swollen, their tibiæ short... 24

Front legs normal, their tibiæ not short.

Flagellum long, *with* long sparse hairs.................................**Tetrastichus** Haliday.

Flagellum not especially long, *without* long sparse hairs; metanotum smooth, without a median carina...**Aprostocetus** Westwood.

24. Pronotum transverse quadrate, not short; abdomen oval, shorter than the thorax...**Cratæpus** Förster.

25. Flagellum clavate, hairy, the funicle 2-jointed, the joints transverse; pronotum very short; abdomen ovate, not longer than the thorax......................................**Pentastichus** Ashmead.

SUBFAMILY IV. ELACHERTINÆ.

1856. Elachistoidæ, Family 18 (partim), Förster, Hym. Stud., II., pp. 19, 26 and 72.

1875. Elachistina, Tribus (partim), Thomson, Hym. Skand., V., p. 180.

1886. Elachistinæ, Subfamily (partim), Howard, Ent. Amer., I., p. 198; II., p. 99.

1897. Eulophinæ, Subfamily IV. (partim), Ashmead, Proc. Ent. Soc. Wash., IV., p. 249.

This subfamily is based upon the genus *Elachertus* Spinola, established in 1811. Walker changed it to *Elachestus* which held sway until 1856, when Förster changed it to *Elachistus*, making it the type of his family *Elachistoidæ*. I restore the original spelling of the genus and call the subfamily *Elachertinæ*. The continual change in the spelling of long-established genera is most annoying, confusing and difficult to follow and I hold, with many other zoölogists, that the only way to free ourselves from these perplexities is to adhere strictly to the original spelling and to treat all genera incorrectly formed as mere combinations of letters without special significance. In no other way can we secure permanency in nomenclature.

All the species falling in this subfamily are apparently parasitic only upon the larvæ of Lepidoptera, and more especially upon various families in the suborder Heterocera, particularly those belonging to the families *Bombycidæ*, *Noctuidæ*, *Geometridæ* and *Tortricidæ*.

Four minor groups, or tribes, have been recognized, distinguished by the number and length of the hind tibial spurs.

TABLE OF TRIBES.

1. Hind tibiæ with only *one* apical spur.................................... 2
   Hind tibiæ with *two* apical spurs.
      Hind tibial spurs *very* long; pronotum anteriorly acute................Tribe I. Euplectrini.
      Hind tibial spurs normal, never very long; pronotum anteriorly rounded..Tribe II. Ophelinini.
2. Hind tibial spur normal, rarely very long.................................. Tribe III. Elachertini.

TRIBE I. *Euplectrini.*

This tribe is easily separated from the others by the two very long apical spurs of the hind tibiæ, the inner spur being very nearly as long as the basal joint of the tarsi.

Although parasitic upon lepidopterous larvæ, like the other tribes, it differs widely from the others, whose habits are known, in that the larvæ are either external feeders, or on reaching maturity, gnaw their way out of their host and spin small silk cocoons, like some of the *Braconidæ*, within which they pupate and undergo their final transformation. All of the others either pupate as naked pupæ, without a cocoon, within the body of their hosts, or emerge and attach themselves to the under or upper side of a leaf, or else conceal themselves in some convenient crevice or under loose bark.

TABLE OF GENERA.

1. Females.. 2
   Males.. 3
2. Scape in both sexes normal, slender; postmarginal vein distinctly longer than the stigmal vein.
   Euplectrus Westwood (type *Pteromalus bicolor* Swederus).
   Scape in male abnormally enlarged, swollen; postmarginal vein not longer than the stigmal.
   Pachyscapha Howard (type *P. insularis* How.).
3. Scape of antennæ normal.. **Euplectrus** Westwood.
   Scape of antennæ enormously enlarged...................................**Pachyscapha** Howard.

TRIBE II. *Ophelinini.*

The much shorter hind tibial spurs separate this tribe from the *Euplectrini*. The pronotum is also different, more rounded anteriorly, and the hind coxæ are not so much swollen.

It is difficult sometimes to tell whether or not the abdomen is petiolate or sessile, and in two or three cases I have been compelled to put certain genera in both categories, the petiole being so short as to give the abdomen the appearance of being sessile.

TABLE OF GENERA.

1. Females.......... 2
   Males.......... 14
2. Abdomen distinctly petiolate.......... 3
   Abdomen sessile or subsessile.......... 11
3. Scutellum with *two* dorsal grooved lines.......... 4
   Scutellum *without* dorsal grooved lines.......... 9
4. Body metallic.......... 5
   Body *not* metallic.......... 10
5. Eyes bare, not pubescent.......... 8
   Eyes pubescent; antennæ 9-jointed.......... 6
6. Abdomen ovate or oblong-oval, shorter than the thorax.......... 7
   Abdomen conic-ovate, not shorter than the thorax, the second segment large; funicle 4-jointed, the joints cylindrical, longer than thick; metathorax produced into a subglobose neck.
      Scutellum *with* a median grooved line; mesothoracic furrows distinct.
      Diglyphomorpha Ashmead, g. nov. (type *Diglyphus maculipennis* Ashm.).
      Scutellum *without* a median grooved line; mesothoracic furrows very delicate although complete, appearing incomplete without the aid of a strong lens.......... **Ardalus** Howard (type *A. aciculatus* How.).
7. Antennæ 9-jointed, the funicle 4-jointed, subcompressed, joints 3–4 wider than long; scutellum without grooved lines.......... **Leucodesmia** Howard (type *L. typica* Howard).
   Antennæ 10-jointed, the funicle joints longer than wide.
      Scutellum with 2 dorsal grooved lines.......... **Elachertomorpha** Ashmead, g. nov. (type *E. flaviceps* Ashm.).
8. Antennæ 10-jointed, the funicle 4-jointed, the joints loosely joined; abdomen globose, the petiole long, slender; scutellum with two grooved lines.......... **Stenomesius** Westwood.
   Antennæ 10-jointed, with *one* ring-joint.......... 10*
9. Antennæ 9-jointed with *two* ring-joints.......... 10
   Antennæ 9-jointed, with one ring-joint; the funicle 4-jointed, eyes pubescent; funicle joints compressed, joints 3–4 wider than long; abdomen oval or ovate, shorter than the thorax...... **Leucodesmia** Howard (type *L. typica* How.).
10. Antennæ 9-jointed.
      Pronotum campanulate; pedicel long, obconic. **Miotropis** Thomson (type *M. sulcicris* Thoms.).
      Pronotum quadrate; pedicel not long.......... **Dichotomus** Förster (type *D. acerinus* Först.).

10*. Body of abdomen ovate as long or longer than the thorax, the petiole very short.
      Sympiesomorpha Ashmead, g. nov. (type *S. brasiliensis* Ashm.).

Body of abdomen subglobose or ovate, much shorter than the thorax, the petiole usually long.
Stenomesius Westwood (type *Ichneumon rufescens* Rossi).

11. Scutellum with *two* dorsal grooved lines.. 12
Scutellum *without* dorsal grooved lines.. 13

12. Antennæ 9-jointed.
Metallic; scutellum with a median grooved line; eyes pubescent.
Diglyphomorpha Ashmead (partim).
Antennæ 10-jointed, with *one* ring-joint, the funicle 4-jointed, the club 3-jointed.
Non-metallic; metathorax with a median carina; marginal vein as long as or a little longer than the submarginal, the stigmal vein only about one third the length of the marginal.
Alophus Ashmead, g. nov. (type *A. flavus* Ashm.).
Antennæ 10-jointed, with *one* ring-joint, the club not thickened, tibial spurs short.
Sympiesomorpha Ashmead, g. nov. (type *S. brasiliensis* Ashm.).

13. Antennæ 9-jointed, with *one* ring-joint, the club thickened, 3-jointed; tibial spurs long.
Ophelinus Haliday (type *Eulophus ursidius* Walk.).

14. Abdomen distinctly petiolate.. 15
Abdomen sessile or subsessile.. 22

15. Scutellum with *two* dorsal grooved lines.. 16
Scutellum *without* dorsal grooved lines-.. 21

16. Body metallic.. 17
Body not metallic.. 19

17. Eyes bare, not pubescent.. 20
Eyes pubescent.
Antennæ, 9-jointed with one ring-joint.. 18
Antennæ 8-jointed, with one ring-joint.

18. Scutellum *with* a median grooved line; mesothoracic furrows very distinct. **Diglyphomorpha** Ashm.
Scutellum *without* a median grooved line; mesothoracic furrows very delicate.... **Ardalus** Howard.

19. Antennæ 9-jointed, with one ring-joint, the funicle 4-jointed, the club ovate, 2-jointed, the flagellum compressed, the joints of the funicle excised at apex above................ **Leucodesmia** Howard.

20. Antennæ 10-jointed, with 1 ring-joint, the funicle 4-jointed, the club 3-jointed, the funicle with 3 branches.. **Teleogmus** Förster.

21. Antennæ 9-jointed, with two ring-joints.
Pronotum campanulate.. **Miotropis** Thomson.
Pronotum quadrate.. **Dichotomus** Förster.

22. Scutellum *with* 2 dorsal grooved lines.. 23
Scutellum *without* dorsal grooved lines.. 25

23. Antennæ 10-jointed, with *one* ring-joint, the funicle 4-jointed, the club 3-jointed................ 24
Antennæ 9-jointed, with *one* ring-joint, the funicle 3-jointed.
Metallic; scutellum with a median grooved line................ **Diglyphomorpha** Ashmead.

24. Non-metallic.
Abdomen with a very short petiole.. **Alophus** Ashmead.
Abdomen with a long petiole.. **Stenomesius** Westwood.

25. Antennæ 9-jointed.. **Ophelinus** Haliday.

Tribe III. *Elachertini.*

This tribe may be at once recognized from the two tribes previously defined by the hind tibiæ having only *one* apical spur; otherwise it is scarcely distinguishable from the *Ophelinini*, many genera falling in it being easily confused with some in that tribe.

TABLE OF GENERA.

1. Females.. 2
Males.. 14
2. Abdomen distinctly petiolate.. 3
Abdomen sessile or subsessile.. 5
3. Scutellum with two dorsal grooved lines.
Body neither wholly black or wholly metallic, more or less yellow or marked with yellow... 4
Body metallic or wholly black; abdomen ovate, hardly as long as the thorax, or rounded; antennæ 9-jointed (or 10-jointed, with *one* ring-joint), the funicle 4-jointed, the joints not or very little longer than thick...............**Elachertus** Spinola (type *E. abdominalis* Spinola).
4. Abdomen conic-ovate, barely longer than the thorax; antennæ 10-jointed with one ring-joint, the funicle 4-jointed, the joints long, loosely joined, the club 3-jointed, marginal vein very long.
5. Scutellum with *two* dorsal grooved lines.. 6
Scutellum *without* dorsal grooved lines.. 9
6. Head, viewed from in front, wider than long and not especially thin antero-posteriorly.......... 7
Head, viewed from in front, much longer than wide, and very thin antero-posteriorly............ 8
7. Body *not* metallic, the head and thorax marked with yellow.
Antennæ 9-jointed, with *one* ring-joint, the pedicel much longer than wide, the funicle 3-jointed, subcompressed, the club 3-jointed....**Cirrospilus** Westwood (type *C. elegantissimus* Westw.).
Antennæ 10-jointed, with *one* ring-joint, the pedicel short, only a little longer than thick, the funicle 4-jointed, the club 3-jointed.......................**Cirrospiloideus** Ashmead, g. nov. (type *Miotropis platynotæ* Howard).
Body metallic; antennæ 10-jointed, with *one* ring-joint, the pedicel longer than wide, the funicle 4-jointed, joints 2–4 not longer than thick............................**Elachertus** Spinola (partim).
8. Antennæ 8-jointed, *without* a ring-joint or 9-jointed with a ring-joint, the pedicel not much longer than wide, the flagellum subcompressed; body striped or banded with black lines; wings banded or maculate.......................**Zagrammosoma** Ashmead n. n. (type *Hippocephalus multilineata* Ashm.).
9. Antennæ 8-jointed or less.. 10
Antennæ 9-jointed or more.. 12
10. Funicle 3-jointed, the club 3-jointed.. 11
Funicle 2-jointed, the joints subpedunculate, the club ovate, 3-jointed.
Middle lobe of the mesonotum longer than wide; metathorax very short, the apical lateral angles subacute; abdomen oblong-oval, depressed.............**Scotolinx** Ashmead, gen. nov. (type *S. gallicola* Ashm.).
11. Mesonotum a little *longer* than wide; abdomen conic-ovate ....**Olynx** Förster (type *Ichneumon gallarum* L.).
Mesonotum a little *wider* than long; abdomen oval or ovate ....**Parolynx** Ashmead (type *P. lineatifrons* Ashm.).
12. Antennæ 10-jointed, with *one* ring-joint.. 13

Antennæ 9-jointed, with *one* ring-joint.

Non-metallic, usually yellowish, or the thorax more or less yellow; scutellum with 4 bristles; pronotum campanulate; abdomen ovate or conic-ovate...... **Cirrospilus** Westwood (partim).

13. Metallic in part; mesonotum not longer than the scutellum; abdomen broadly rounded, depressed, and a little shorter than the thorax............. **Rhicnopelte** Förster (type *R. fulviventris* Förster).

Non-metallic; mesonotum long; abdomen elongate oval or ovate, usually pointed at apex and longer than the thorax........................ **Stenomesioidea** Ashmead, g. nov. (type *S. mellea* Ashm.).

14. Abdomen distinctly petiolate.. 15

Abdomen sessile or subsessile.. 17

15. Scutellum with *two* dorsal grooved lines.

Body neither metallic nor wholly black.. 16

Body metallic or wholly black.

Antennæ 10-jointed, with *one* ring-joint........................... **Elachertus** Spinola.

16. Antennæ 10-jointed, with *one* ring-joint. **Cirrospiloideus** Ashmead.

17. Scutellum with *two* dorsal grooved lines.. 18

Scutellum *without* dorsal grooved lines.. 21

18. Head normal, viewed from in front wider than long or rounded, not especially thin antero-posteriorly.. 19

Head abnormal, viewed from in front much *longer* than wide and very thin antero-posteriorly...... 20

19. Body not wholly metallic, the head and thorax marked with yellow.

Antennæ 9-jointed, with *one* ring-joint................................ **Cirrospilus** Westwood.

Antennæ 10-jointed, with *one* ring-joint............................. **Cirrospiloideus** Ashmead.

Body metallic; antennæ 10-jointed, with *one* ring-joint, the funicle 4-jointed...... **Elachertus** Spinola.

20. Antennæ 9-jointed with a ring-joint, body striped or banded with black lines; wings banded or maculate.. **Zagrammosoma** Ashmead.

21. Antennæ 8-jointed or less.. 22

Antennæ 9-jointed or more.. 24

22. Funicle 3-jointed.. 23

Funicle 2-jointed.. **Scotolinx** Ashmead.

23. Mesonotum *longer* than wide... **Olynx** Förster.

Mesonotum a little *wider* than long.. **Paraolinx** Ashmead.

24. Antennæ 10-jointed, with *one* ring-joint.

Non-metallic.. (?) genus.

Antennæ 9-jointed, with *one* ring-joint.

Metallic.. **Rhicnopelte** Förster.

Non-metallic.. **Cirrospilus** Westwood (partim).

SUBFAMILY V. EULOPHINÆ.

1856. Eulophoidæ, Familie 19 (partim), Förster, Hym. Stud., II., pp. 19, 26 and 74.

1875. Eulophina, Tribus (partim), Thomson, Hym. Skand., V., p. 180.

1886. Eulophinæ, subfamily (partim), Howard, Ent. Amer., I., p. 198; II., p. 99.

To this subfamily are restricted all Eulophids having the mesonotum entire or only partially divided, the mesonotal furrows being at the most only indicated anteriorly; otherwise it resembles the others.

The species are parasites of the Micro-lepidoptera, and particularly the leaf-miners, although other groups are also attacked by them. Some are also said to be hyperparasites of other Chalcidoids.

Most of the species are very small, of brilliant metallic colors, and the antennæ in many males are ramose or branched.

Two tribes have been recognized :

TABLE OF TRIBES.

Hind tibiæ with 2 apical spurs...Tribe I. **Eulophini.**

Hind tibiæ with one apical spur..Tribe II. **Hemiptarsenini.**

Tribe I. *Eulophini.*

In having two apical spurs to the hind tibiæ this tribe agrees with the *Euplectrini* and the *Ophelinini*, in the subfamily *Elachertinæ*, but it cannot possibly be confused with these tribes, if attention is given to the difference pointed out in the mesonotum, the mesonotal furrows being *incomplete.*

TABLE OF GENERA.

1. Females.. 2
   Males... 11
2. Scutellum with *two* dorsal grooved lines... 3
   Scutellum *without* dorsal grooved lines.. 4
3. Antennæ inserted below the middle of the face.
   Head seen from in front longer than wide, or as long as wide; stigmal vein about half the length of the marginal vein; pronotum short, rounded anteriorly; abdomen ovate, depressed above; antennæ 8-jointed, with *one* ring-joint, the funicle *two*-jointed, the club long, 3-jointed. **Diaulus** Ashmead, g. nov. (type *D. begini* Ashm.).
   Head seen from in front twice wider than long or nearly; stigmal vein long, nearly two thirds the length of the marginal vein; pronotum semicircular, not short, narrower than the mesonotum; abdomen ovate, depressed above, hardly as long as the thorax; antennæ 9-jointed, the flagellum subclavate, the funicle *four*-jointed.............. **Diaulomorpha** Ashmead, g. nov. (type *D. australiensis* Ashm.).
4. Antennæ inserted nearer the middle of the face, the scape long...................................... 5
   Antennæ inserted below the middle of the face.. 6
5. Thorax long, the pronotum long, conical and much narrower than the mesonotum, but fully as long; head wide, as wide as the thorax, seen from in front a little wider than long; antennæ 10-jointed, with *one* ring-joint, inserted a little below the middle of the face, the funicle 4-jointed, the joints long, the first much the longest, twice as long as the third, the fourth hardly longer than thick; wings with a discoidal cloud beneath the stigmal vein, the marginal vein very long, more than thrice the length of the stigmal..............**Notanisomorpha** Ashmead, g. nov. (type *N. collaris* Ashm.).
6. Marginal vein very long, three or more times longer than the stigmal vein........................ 7
   Marginal vein shorter, not thrice as long as the stigmal vein, usually only about twice as long..... 8
7. Antennæ 10-jointed, the flagellum more or less compressed, the joints long, the first joint of the funicle

much the longest joint; metathoracic spiracles oblong-oval; abdomen often very long, conically pointed, much longer than the head and thorax united........................**Sympiesis** Förster (type *Eulophus sericeicornis* Nees).

Antennæ 10-jointed, with *one* ring-joint, the flagellum not compressed, the funicle joints cylindrical; metathoracic spiracles minute, rounded; abdomen ovate or oval, depressed, not as long as the head and thorax united.................**Dimmockia** Ashmead,[1] g. nov. (type *Eulophus incongruus* Ashm.)

8. Thorax not robust.. 9

Thorax robust.

Metathorax with a median carina, the spiracles small, rounded; antennæ 9-jointed, with *one* ring-joint, the funicle 3-jointed, the club 3-jointed, abdomen oval or subrotund, depressed, usually shorter than the thorax...............**Cratotrechus** Thomson (type *Ichneumon larvarum* L.).

9. Wings hyaline, the flagellum not compressed.. 10

Wings dusky, the flagellum compressed, the funicle very short; metanotum with a median carina. **Microplectron** Thomson (type *Entedon fuscipennis* Zeterstd.).

10. Antennæ 9-jointed (scape pedicel, *one* ring-joint, 3-jointed funicle and a 3-jointed club).

Funicle black; metanotum with a distinct median carina, the lateral folds usually present. **Eulophus** Geoffroy (type *Ichneumon pectinicornis* L.).

Funicle white; metanotum with a delicate median carina, the lateral folds always absent. **Microlycus** Thomson (type *M. heterocerus* Thoms.).

11. Scutellum *with* dorsal grooved lines.. 12

Scutellum *without* dorsal grooved lines.. 13

12. Thorax not long, the pronotum anteriorly rounded; antennæ inserted below the middle of the face, the flagellum without branches, filiform.

Stigmal vein not more than half the length of the marginal vein; antennæ 8-jointed. **Diaulus** Ashmead.

Stigmal vein longer, at least two thirds the length of the marginal vein; antennæ 9-jointed. **Diaulomorpha** Ashmead.

13. Thorax not long, the pronotum of normal length.. 14

Thorax long, the pronotum long, conical and much narrower than the mesonotum; antennæ 10-jointed, with one ring-joint...**Notanisomorpha** Ashmead.

14. Marginal vein very long, three or more times longer than the stigmal vein......................... 15

Marginal vein shorter, not thrice as long as the stigmal vein.. 16

15. Antennæ 10-jointed, with one ring-joint.

Flagellum compressed or subcompressed; metathoracic spiracles oval or subovate; abdomen long. **Sympiesis** Förster.

Flagellum filiform, cylindrical; metathoracic spiracles small, round; abdomen oval. **Dimmockia** Ashmead.

16. Thorax not robust.. 17

Thorax robust.

Metanotum with a median carina and lateral folds; antennæ 9-jointed with 3 *long* branches. **Cratotrechus** Thomson.

17. Wings clear hyaline; flagellum not compressed.. 18

Wings dusky; flagellum compressed; funicle with 3 *short* branches..........**Microplectron** Dalman.

18. Funicle with 3 *long* branches..**Eulophus** Geoffroy.

Funicle with 3 *short* branches...**Microlycus** Thomson.

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[1] Named in honor of Dr. Geo. Dimmock.

Funicle with 2 long branches.................................... **Dicladocerus** Westwood.
Funicle with 5 long branches.................................... **Pentacladia** Westwood.

TRIBE II. *Hemiptarsenini.*

The single-spurred hind tibiæ distinguish the tribe; otherwise it is not distinguishable from the preceding tribe.

The genera are not numerous and may be easily recognized by the characters made use of in the following table:

TABLE OF GENERA.

1. Females.. 2
Males... 5
2. Scutellum *without* dorsal grooved lines.................................... 3
Scutellum *with* 2 dorsal grooved lines.
Antennæ 8-jointed (scape, pedicel, one ring-joint, 2-jointed funicle and a 3-jointed club).
Diglyphus Walker = *Solenotus* Först. (type *D. poppœa* Walk.).
3. Antennæ inserted *below* the middle of the face.............................. 4
Antennæ inserted on the middle of the face.
Antennæ 9-jointed (scape, pedicel, one ring-joint, 3-jointed funicle and 3-jointed club), the scape long, extended beyond the ocelli.... **Hemiptarsenus** Westwood (type *H. fulvicollis* Westw.).
4. Antennæ 9-jointed with 1 ring-joint, the funicle 3-jointed, cylindrical, the first joint the longest, the club 3-jointed .... **Necremnus** Thomson (type *Eulophus leucarthrus* Nees).
5. Scutellum *without* dorsal grooved lines.................................... 6
Scutellum *with* 2 dorsal grooved lines.
Antennæ 8-jointed, with a ring-joint.................................. **Diglyphus** Walker.
6. Antennæ inserted *below* the middle of the face, the scape not extending beyond the ocelli.......... 7
Antennæ inserted *on* the middle of the face, the scape long, extending beyond the ocelli.
Hemiptarsenus Westwood.
7. Antennæ 9-jointed, the first three joints of the funicle with a long branch...... **Necremnus** Thomson.

FAMILY LXXII. TRICHOGRAMMIDÆ.

1846. Eulophidæ, Family II. (partim), Walker, List Chalc. Brit. Museum, I., p. 62.
1856. Trichogrammatoidæ, Family XXII., Förster, Hym. Stud., II., pp. 20, 26 and 87.
1897. Trichogrammatinæ, Underfam., Aurivillius, Entom. Tidsk., 18, p. 250.

Dr. Arnold Förster was the first to recognize this natural family, which is at once distinguished, from all other groups, by the tarsi being *3-jointed,* never more nor less.

It comes nearest to the Family *Eulophinæ,* where Westwood placed his genus *Trichogramma* in 1840, and apparently forms a connecting link between that family and the next, or the *Mymaridæ.*

In habits the group agrees with the *Mymaridæ*, all the species falling in it being egg-parasites.

Two subfamilies have been recognized:

TABLE OF SUBFAMILIES.

Wings *without* regular rows of hairs .... Subfamily I. OLIGOSITINÆ.
Wings *with* regular rows of hairs .... Subfamily II. TRICHOGRAMMINÆ.

SUBFAMILY I. OLIGOSITINÆ.

In the arrangement of the pubescence of the wings this group resembles most closely the *Eulophinæ*, and many of the species, but for the *3-jointed tarsi*, could be easily mistaken for species in that family.

Only five genera have been described, but it is probable that very many more exist and will be discovered when more attention is given to rearing the egg-parasites of the different orders of insects.

TABLE OF GENERA.

1. Females 2
   Males 6
2. Antennæ 6- or 7-jointed with *one* ring-joint 3
   Antennæ 8-jointed with *one* ring-joint, the funicle 2-jointed .... **Asynacta** Förster (type unknown).
3. Antennæ 6-jointed 5
   Antennæ 7-jointed, with a ring-joint.
      Ovipositor not prominent 4
      Ovipositor prominent, at least half the length of the long abdomen; eyes oval; pedicel obconical, more than twice longer than thick; flagellum fusiform, 4-jointed, the single funicle joint hardly separable from the club; wings rather narrow with a long marginal fringe.
      Prestwichia Lubbock (type *P. aquatica* Lubbock).
4. Funicle 1-jointed, the club 3-jointed.
   Front wings narrow, with a long marginal fringe.
      Front wings *without* a substigmal fascia; scape straight or clavate, the single funicle joint scarcely longer than thick; eyes oblong-oval; metanotum smooth, without a carina .... **Oligosita** Haliday (type *O. collina* Hal. (Walker).
      Front wings *with* a substigmal fascia; scape subclavate, arcuate, the single funicle-joint much longer than thick; eyes rounded; metanotum bicarinate.
      Westwoodella Ashmead, g. nov. (type *Oligosita subfasciata* Westw.).
   Front wings broad, with a short marginal fringe .... **Brachista** Haliday (type unknown).
5. ? new genus.
6. Antennæ 7-jointed or less, with *one* ring-joint 7
   Antennæ 8-jointed, with one ring-joint .... **Asynacta** Förster.
7. Fully winged 8
   Wingless or subapterous.
      Scape slender, pedicel obconical, about thrice as long as thick at apex, the flagellum fusiform

4-jointed, the single funicle joint hardly separable from the club, hind legs very long.
Prestwickia Lubbock.

8. Funicle 4-jointed, the club one-jointed.
    Front wings with a *long* marginal fringe.
        Metanotum *without* carinæ.................................. **Oligosita** Haliday.
        Metanotum bicarinate.................................. **Westwoodella** Ashmead.
    Front wings with a short marginal fringe.............................. **Brachista** Haliday.

SUBFAMILY II. TRICHOGRAMMINÆ.

This subfamily is easily recognized by peculiarities of the front wings, the pubescence, being arranged in distinct rows or lines, a peculiarity found in no other group, except to a slight extent in some genera in the subfamily *Entedoninæ*, of the family *Eulophinæ*.

TABLE OF GENERA.

1. Females.. 2
    Males.. 10
2. Veins in front wings forming a regular arch.. 3
    Veins in front wings *not* forming a regular arch.. 4
3. Antennæ 8-jointed, the flagellum clavate, the funicle 2-jointed, the joints transverse.
        Body short, robust.............................. **Poropœa** Förster (type *P. stollwerckii* Först.).
4. Antennæ 7-jointed or less.. 5
    Antennæ 8-jointed (scape, pedicel, *one* ring-joint, a 2-jointed funicle and a 3-jointed club).
    Trichogramma Westwood (type *T. evanescens* Westw.).
5. Antennæ 6-jointed or less.. 7
    Antennæ 7-jointed.
        Wings with a short marginal fringe.. 6
        Wings with a long marginal fringe............ **Chætostricha** Haliday (type *C. dimidiata* Hal.).
6. Antennæ with the club 4-jointed (scape, pedicel, one ring-joint and a 4-jointed club).
    Lathromeris Förster (type *L. scutellaris* Först.).
7. Antennæ 3- or 6-jointed, *without* a ring-joint.. 8
    Antennæ 6-jointed, *with* a ring-joint (scape, pedicel, one ring-joint, a 2-jointed funicle and a solid club).
        Abdomen shorter than the thorax...... **Xanthoatomus** Ashmead, gen. nov. (type *X.*   ).
        Abdomen subcylindrical, longer than the thorax.............................. **Pentarthron** Riley
        (type *Trichogramma minutum* Riley).
8. Antennæ 3-jointed.. 9
    Antennæ 6-jointed, the club 3-jointed (scape, pedicel, a 1-jointed funicle and a 3-jointed club).
        Postscutellum not distinct, *without* a triangular projection.................. **Centrobia** Förster
        (type *Trichogramma Walkeri* Först.).
        Postscutellum distinct, *with* a triangular projection.................... **Paracentrobia** Howard
        (type *P. punctata* How.).
9. Club not jointed.
        Marginal fringe not especially long, the marginal vein not more than twice as long as the stigmal vein.. **Aprobosca** Westwood.
10. Antennæ 7-jointed or less.. 11
    Antennæ 8-jointed.

Veins of front wings forming a regular arch; flagellum filiform............ **Poropœa** Förster.
Veins of front wings not forming a regular arch.................. **Trichogramma** Westwood.
11. Antennæ 6-jointed or less.. 12
Antennæ 7-jointed.
  Wings with a very long marginal fringe.................................. **Chætostricha** Haliday.
  Wings with a short marginal fringe.
    Club of antennæ 4-jointed.. **Lathromeris** Förster.
    Club of antennæ 3-jointed.. **Pentarthron** Riley.
12. Antennæ 6-jointed (scape, pedicel, a 1-jointed funicle and a 3-jointed club), marginal vein about thrice as long as the stigmal.. **Centrobia** Förster.
Antennæ 3-jointed (scape, pedicel and a long, solid club); marginal vein not more than twice the length of the stigmal vein.................... **Aprobosca** Westwood (type *A. erosicornis* Westw.).

Family LXXIII. MYMARIDÆ.

1833. Mymares, Tribus 5^{ta}, Haliday, Ent. Mag., I., p. 341.
1839. Mymaridæ, Family 17, Haliday, Hym. Syn., p. II.
1840. Mymarides, Subfamily 6 (Family Proctotrypidæ), Westwood, Intro. Mod. Class. Ins. Synop., p. 78.
1856. Mymaroidæ, Familie 28, Förster, Hym. Stud., II., pp. 20, 27 and 116.
1897. Mymaridæ, Family LXXIII., Ashmead, Proc. Ent. Soc. Washington, IV., p. 236.

This group was correctly defined by A. H. Haliday, first as a tribe and afterwards as a distinct family.

In 1833 in speaking of it he says: "This tribe comprises the very atoms of the order Hymenoptera. Their hues are mostly black or yellowish, unadorned by metallic splendor: the plumed and iridescent wings of many are beautiful objects for the microscope. The males, by their very long and slender antennæ (sometimes more than twice the length of the body), resemble Ichneumons in miniature."

Every species belonging to the family lives parasitically in the eggs of other insects, and in habits agree with the *Trichogrammidæ*.

Stephens, Curtis, Walker, Westwood, Förster, Thomson and most systematists treat the group as a component of the *Proctotrypoidea* and Dr. von Dalla Torre in his *Catalogus Hymenopterorum* follows these older authorities and treats it as a subfamily in the *Proctotrypidæ*. More than ten years ago I pointed out the structural characters that excluded the group from having any affinity with these insects; they are widely distinct in many particulars and form a compact natural family in the Chalcidoidea, as was first pointed out by Haliday so many years ago. My extensive studies into all groups of the Hymenoptera have only confirmed and emphasized the correctness and soundness of Haliday's views, the ablest systematist of his day, and his views should prevail.

Two subfamilies have been defined, separated by the number of joints in the tarsi.

TABLE OF SUBFAMILIES.

Tarsi 5-jointed	Subfamily I. GONATOCERINÆ.
Tarsi 4-jointed	Subfamily II. MYMARINÆ.

SUBFAMILY I. GONATOCERINÆ.

The subfamily is easily recognized by the longer tarsi which are always 5-jointed, never 4-jointed.

Two tribes may be distinguished by the following simple characters:

TABLE OF TRIBES.

Abdomen petiolate	Tribe I. Ooctonini.
Abdomen petiolate	Tribe II. Gonatocerini.

TRIBE I. *Ooctonini.*

TABLE OF GENERA.

1.	Females	2
	Males	3
2.	Antennæ 11-jointed	**Ooctonus** Haliday (type *O. insignis* Hal.).
	Antennæ 9-jointed	**Camptotera** Förster (type *C. papaveris* Först.).
3.	Antennæ 13-jointed	**Ooctonus** Haliday.
		(?) **Palæomyrmar** Meunier (type *P. suecine* Meunier).
	Antennæ 10-jointed	**Camptotera** Förster.

TRIBE II. *Gonatocerini.*

The distinctly petiolated abdomon distinguishes the tribe.

TABLE OF GENERA.

1.	Females	2
	Males	4
2.	Antennæ more than 8-jointed	3
	Antennæ 8-jointed.	
	Marginal vein long	**Leimacis** Förster (type *L. rufula* Först.).
	Marginal vein short	**Alaptus** Haliday (type *A. buscalus* Hal.).
3.	Antennæ 9-jointed; marginal vein long	**Litus** Haliday (type *L. cynipseus* Hal.).
		? = *Malfattia* Meunier (type *M. molitoræ* Meun.).
	Antennæ 11-jointed; marginal vein short	**Gonatocerus** Nees (type *G. longicornis* Nees).
4.	Marginal vein short	5
	Marginal vein long.	
	Antennæ 11-jointed	**Leimacis** Förster.
	Antennæ 13-jointed	**Litus** Haliday.
5.	Antennæ 10-jointed	**Alaptus** Haliday.
	Antennæ 13-jointed	**Gonatocerus** Nees.

SUBFAMILY II. MYMARINÆ.

In this subfamily fall some of the smallest Hymenoptera known, hardly visible to the naked eye, and living parasitically in the eggs of some other small insect.

The group is distinguished by having the tarsi 4-jointed, not 5-jointed as in the *Gonatocerinæ*.

It is divided by the attachment of the abdomen into two tribes.

TABLE OF TRIBES.

Abdomen sessile or subsessile.................... Tribe I. Anaphini.
Abdomen distinctly petiolate .... Tribe II. Mymarini.

TRIBE I. *Anaphini.*

The sessile abdomen distinguishes the tribe.

TABLE OF GENERA.

1. Females 2
   Males 4
2. Antennæ more than 8-jointed 3
   Antennæ 8-jointed .... **Anthemus** Howard (type *A. chionaspidis* How.).
3. Antennæ 9-jointed.
      Marginal vein lengthened.................... **Anaphes** Haliday (type *A. fuscipennis* Hal.).
      Marginal vein not lengthened.................... **Anagrus** Haliday (type *Ichneumon atomus* Linné).
4. Antennæ more than 9-jointed.................... 5
   Antennæ 9-jointed .... **Anthemus** Howard.
5. Antennæ 12-jointed; marginal vein long .... **Anaphes** Haliday.
   Antennæ 13-jointed; marginal vein short.................... **Anagrus** Haliday.

TRIBE II. *Mymarini.*

In this tribe the abdomen is always distinctly petiolate, never sessile.

TABLE OF GENERA.

1. Females.................... 2
   Males 7
2. Antennal club solid, unjointed 4
   Antennal club 2-jointed 3
3. Marginal vein long; tarsi short .... **Eustochus** Haliday (type *E. atripennis* Hal.).
   Marginal vein short; tarsi long .... **Doryclytus** Förster (type *D. vitripennis* Förster.
4. Marginal vein either lengthened or punctiform, but never wholly absent.................... 6
   Marginal and other veins absent.
      Hind wings wanting or aborted; front wings neither spoon-shaped nor much broadened at apex, sometimes split into two parts 5
      Hind wings present, normal; front wings spoon-shaped; antennæ 9-jointed.
      Mymarilla Westwood (type *M. taprobanica* Westw.).

5. Front wings widened only at apex and with a long marginal fringe; antennæ 9-jointed.
Mymar Haliday (type *M. pulchellus* Hal.).

Front wings not wide, sometimes split at apex; antennæ apparently but 3-jointed.
Packardiella Ashmead (type *Pteratomus putmanii* Pack.).

6. Antennæ 9-jointed.
    Marginal vein punctiform .... **Polynema** Haliday (type *Ichneumon ovulorum* Hal.).
    Marginal vein lengthened.
        Metanotum *without* a carina .... **Stichothrix** Förster (type *S. cardui* Först.).
        Metanotum with *two* carinæ.............. **Ceraphractus** Haliday (type *C. cinctus* Hal.).

7. Marginal vein punctiform or lengthened 9

Marginal vein and all others absent or wanting.
    Front wings narrow, usually somewhat broader toward apex, or linear or split at apex; hind wings usually absent or aborted 8
    Front wings broad, spoon-shaped; hind wings entire.
        Antennæ 13-jointed .... **Mymarilla** Westwood.

8. Front wings not split at apex; antennæ 13-jointed .... **Mymar** Haliday.

Front wings linear or split at apex; antennæ (?) imperfect.................. **Packardiella** Ashmead.

9. Marginal vein lengthened.. 10

Marginal vein punctiform.
    Antennæ 13-jointed.. **Polynema** Haliday.

10. Antennæ 10-jointed; metanotum smooth, without a carina .... **Stichothrix** Förster.

Antennæ 11-jointed; metanotum bicarinate .... **Ceraphractus** Förster.

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Cynipsichneumon Christ, Naturg. d. Insect., 1791, p. 377. (Type not mentioned.)

Lycus Walker, Ann. Mag. Nat. Hist., X., 1843, p. 114. (Type *L. origo* Walker.)
Belongs evidently to the *Microgasteridæ*.

Norbanus Walker, Ann. Soc. ent. France (2), I., 1843, p. 158. (Type *N. dysaules* Walker.)

Peridesmia Förster, Hym. Stud., II., 1856, p. 65. (No type given.)

Prionopus Dalman, Svensk. Vet.-Akad. Handl., XLVI., 1825, p. 393. (No type given.)

GENERA INCORRECTLY PLACED WITH THE CHALCIDOIDEA.

Agonophorus Dalman, Öfvers. Svensk. Vet.-Akad. Förhl., XIV., 1857, p. 287. (No type given.)
Belongs evidently to the superfamily Proctotrypoidea.

Diplolepis Fabricius, Syst. Piez., 1804, p. 149 (=*Diastrophus*).
Belongs to the superfamily Cynipoidea, family *Cynipidæ*.

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Belongs to the superfamily Proctotrypoidea, family *Ceraphroninæ.*

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Belongs to the superfamily Proctotrypoidea, family *Scelioninæ.*

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Smaragdites Westwood (= *Omphale*, Haliday), Mag. Nat. Hist., VI., 1833, p. 419.

Smicra Spinola, Ann. Mus. hist. natur., XVII., 1811, p. 147. (Type *Chalcis sispes* Fabr.)

Smiera Spinola (= *Smicra* Spinola err. imp.), *loc. cit.*, *supra.*

Solenoderus Motschulsky, Bull. Soc. natural. Moscow, XXXVI., 1863, p. 70.

Solenotus Förster, (= *Diglyphus* Walk.) Hym. Stud., II., 1856, p. 74.

Solenura Westwood, Trans. Ent. Soc. London, 1868, Proc., p. xxxvi. (Type *S. telescopica* Westw.)

Solindinia Cameron, Trans. Ent. Soc. London, 1883, p. 189. (Type *S. cyaniventris* Motsch.)

Sosxetra Walker (= *Eudoxinna* Walker), Trans. Ent. Soc. London (3), I., 1862, p. 370.

Spalangia Latreille, Hist. nat. Crust. et Ins., III., 1802, p. 351. (Type *S. nigra* Latr.)

Spalangius Say (n. n. for *Spalangia* Latreille), Contrib. Maclure's Lyc., Phila., II., 1828, p. 79.

Spaniopus Walker, Ent. Mag., I., 1833, p. 371. (Type *S. dissimilis* Walk.)

Sparthiophilus Rondani (= *Euderus* Haliday), Bull. Soc. ent. Ital., IV., 1872, p. 208.

Spartiophilus Rondani (= *Euderus* Haliday), Bull. Soc. ent. Ital., IX., 1877, p. 198.

Sphæripalpus Förster (= *Gitgnathus* Thomson), Beitr. Monogr. Pteromal., 1841, p. 38.

Sphæropisthus Thomson, Hym. Skand., IV., 1875, pp. 116, 131. (Type *S. pascuorum* Thoms.)

Sphegigaster Spinola, Ann. mus. hist. nat., XVII., 1811, p. 149. (Type *S. pallicornis* Spin.)

Sphenolepis Nees (= *Ectroma* Westwood), Ichn. affin. Monogr., II., 1834, p. 256.

Spilochalcis Thomson, Hym. Skand., IV., 1875, p. 15. (Type *Chalcis xanthostigma* Dalman.)

Spintherus Thomson, Hym. Skand., V., 1875, p. 129. (Type *S. obscurus* Thomson.)

Stenocera Walker (= *Stenoceroides* Dalla Torre), Ent. Mag., IV., 1837, p. 357.

Stenoceroides Dalla Torre (n. n. for *Stenocera* Walk.), Wien. ent. Zeitg., XVI., 1897, p. 88. (Type *Stenocera walkeri* Curtis.)

Stenomalus Thomson, Hym. Skand., V., 1878, p. 88. (Type *Pteromalus crassicornis* Dalm.)

Stenomesiodeus Ashmead, gen. nov., ante, p. 355. (Type *S. malea* Ashm.)

Stenomesius Westwood, Lond. & Edinb. Phil. Mag. (3), III., 1833, p. 343. (Type *Ichneumon rufescens* Rossi.)

Stenophrus Förster (= ♂ *Macroglenes* Westw.), Beitr. Monogr. Pteromal., 1841, p. 40.

Stenoterys Thomson, Hym. Skand., IV., 1875, pp. 115, 128. (Type *S. orbitalis* Thoms.)

Sternodes Destefani (= *Destefania* Dalla Torre), Nat. Sicil., X., 1891, p. 118.

Sterrhocoma Förster (= *Cheiloneurus* Westwood), Hym. Stud., II., 1856, p. 33.

Stichocrepis Förster, Verh. d. naturh. Ver. pr. Rheinl., XVII., 1860, p. 130.

Stichothrix Förster, Hym. Stud., II., 1856, pp. 117, 121. (Type *S. cardui* Först.)

Stictomischus Thomson, Hym. Skand., IV., 1875, pp. 220, 234. (Type *S. scaposus* Thomson.)

Stigmatocrepis, gen. nov., ante, p. 273. (Type *S. americana* Ashm.)

Stilbula Spinola, Ann. mus. hist. nat., XVII., 1811, p. 150. (Type *Ichneumon cyniformis* Rossi.)

Stinoplus Thomson, Hym. Stud., V., 1878, p. 107. (Type *Pteromalus militaris* Dalm.)

Stomatoceras Kirby, Journ. Linn. Soc. London, Zoöl., XVII., 1883, p. 62. (Type *Halticella liberator* Walk.)

Stomoctea Dufour (= *Tetrastichus* Haliday), Ann. Sci. nat. Zoöl. (3), V., 1846, p. 23.

Storthygoceras Ratzeburg (= *Rhaphiteles* Walk.), Ichn. d. Fortins., II., 1848, p. 208.

Stylocerus Ratzeburg (= *Rhaphiteles* Walk.), Ichn. d. Forstius, I., 1844, p. 207.

Stylophorella Ashmead, g. nov., ante, p. 275. (Type *S. perplexa* Ashm.)

Stypiura Kirby, Journ. Linn. Soc. London, Zoöl., X., 1883, p. 59. (Type *Chalcis conigastra* Perty.)

Sycobia Walker, Notes on Chalc., Pt. 4, 1871, p. 69. (Type *S. bethyloides* Walk.)

Sycobiella Westwood, Trans. Ent. Soc. London, 1883, p. 33. (Type *S. saundersii* Westw.)

Sycocrypta Coquerel (= ♂ *Blastophaga* Grav.), Rev. & Mag. Zoöl. (2), VII., 1855, p. 422.

Sycophaga Westwood, Trans. Ent. Soc. London, II., 1840, p. 222. (Type *Cynips sycomori* Hasselquest.)

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Sycoryctes Mayr, Verh. zool.-bot. Gesell, Wien, XXXV., 1885, pp. 157, 160–210. (Type *S. patellaris* Mayr.)

Sycoscaptella Westwood, Trans. Ent. Soc. London, 1883, p. 36. (Type *S. affinis* Westw.)

Sycoscapter Westwood, Trans. Ent. Soc. London, 1883, p. 34. (Type *S. insignis* Westw.)

Sycoscapterella Ashmead, gen. nov., ante, p. 239. (Type *Sycoscapter anguliceps* Westw.)

Sycoscapteridea Ashmead, gen. nov., ante, p. 239. (Type *Sycoscapter monilifer* Westw.)

Sympiesis Förster, Hym. Stud., II., 1856, p. 74. (Type *Eulophus sericeicornis* Nees.)

Sympiesomorpha Ashmead, gen. nov., ante, p. 352. (Type *S. brasiliensis* Ashm.)

Sympiezus Thomson (= *Sympiesis* Förster), Hym. Skand., V., 1878, p. 217.

Syntomaspis Förster, Hym. Stud., II., 1856, p. 43. (Type *Torymus cyaneus* Boheman.)

Syntomocera Förster, Verh. d. naturh. Ver. pr. Rheinl., XXXV., 1878, p. 52. (Type *S. clavicornis* Först.)

Syntomopus Walker, Ent. Mag., I., 1833, pp. 371, 372. (Type *S. thoracicus* Walk.)

Syntomorphyrum Förster, Verh. d. naturh. Ver. pr. Rheinl., XXXV., 1878, p. 60. (Type *Eulophus cyclogaster* Ratzeb.)

Syrphophagus Ashmead, Proc. U. S. Nat. Mus., XXII., 1900, pp. 340, 346. (Type *Encyrtus mesograptæ* Ashm.)

Systasis Walker, Ent. Mag., II., 1834, pp. 228, 296. (Type *S. encyrtoides* Walk.)

Systole Walker, Ent. Mag., I., 1832, pp. 13, 22. (Type *S. albipennis* S. Walker.)

Systolodes Ashmead, Ent. Amer., IV., 1888, pp. 42, 43. (Type *S. brevicornis* Ashm.)

Systolomorpha Ashmead, Proc. Linn. Soc. N. S. Wales, 1900, p. 339. (Type *S. thyridopterygis* Ashm.)

T.

Tachardiæphagus Ashmead, gen. nov., ante, p. 303. (Type *T. thoracicus* Ashm.)

Tachinæphagus Ashmead, gen. nov., ante, p. 364. (Type *T. zealandicus* Ashm.)

Tanaoneura Howard, Journ. Linn. Soc. London, Zoöl., XXVI., 1896, p. 146. (Type *T. ashmeadii* Ashm.)

Tanaostigma Howard, Ins. Life, III., 1890, p. 147. (Type *T. coursetiæ* How.)

Tanaostigmodes Ashmead, Proc. Ent. Soc. Washington, IV., 1896, p. 18. (Type *T. howardii* Ashm.)

Telegraphus Ratzeburg (= *Cerapterocerus* Westwood), Ichn. d. Förstins., II., 1848, p. 153.

Teleogmus Förster, Hym. Stud., II., 1856, p. 52. (Type *Eulophus xanthostomus* Nees.)

Terobia Förster, Verh. d. naturh. Ver. pr. Rheinl., XXXV., 1878, p. 64. (Type *T. dispila* Först.)

Terobiella Ashmead, Proc. Linn. Soc. N. S. Wales, 1900, p. 343. (Type *T. flavifrons* Ashm.)

Tetracampe Förster (n. n. for *Epiclerus* Haliday), Beitr. Monogr. Pteromal., 1841, p. 33. (Type *Entedon panyas* Walk.)

Tetracladia Howard, Proc. U. S. Nat. Mus., XV., 1892, p. 368. (Type *T. texana* How.)

Tetracnemus Westwood, Mag. Nat. Hist., I., 1833, p. 258. (Type *T. diversicornis* Westw.)

Tetragonaspis Mayr (=*Idarnes* Walker), Verh. Zool.-bot. Gesell. Wien, XXXV., 1885, pp. 157, 205.

Tetralophidea Ashmead, Proc. U. S. Nat. Mus., XXII., 1900, pp. 327, 330. (Type *T. bakeri* Ashm.)

Tetralophiella Ashmead, Proc. U. S. Nat. Mus., XXII., 1900, pp. 230, 232. (Type *T. brevicollis* Ashm.)

Tetramelia Kirby, Journ. Linn. Soc. London, Zoöl., XX., 1886, p. 31. (Type *Schizespidia plagiata* Walk.)

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Tetranemopteryx Ashmead, gen. nov., ante, p. 239. (Type *Sycoscapter 4-setosa* Westw.)

Tetrapus Mayr, Verh. zool.-bot. Gesell. Wien, XXXV., 1885, pp. 156, 159, 184. (Type *T. americanus* Mayr.)

Tetrarhopala Motschulsky, Bull. Soc. natural. Moscou, XXXVI., 1863, p. 61. (Type *T. nigra* Motsch.)

Tetrasmicra Ashm., gen. nov., ante, p. 252. (Type *Smicra concitata* Walk.)

Tetrastichodes Ashmead, Trans. Am. Ent. Soc., XIV., 1887, p. 203. (Type *T. floridanus* Ashm.)

Tetrastichus Haliday, Trans. Ent. Soc. London, III., 1843, p. 297. (Type *Eulophus miser* Nees.)

Thaumapus Kirby, Journ. Linn. Soc. London, Zoöl., XVII., 1883, p. 56. (Type *Smicra lenticipes* Walk.)

Thaumasura Westwood, Trans. Ent. Soc. London, 1868, Proc., p. xxxvi. (Type *T. terebrator* Westw.)

Thaumatelia Kirby, Journ. Linn. Soc. London, Zoöl., XVII., 1883, p. 60. (Type *Chalcis separata* Walk.)

Theocolax Westwood (= *Cerocephala* Westwood, wingless form), Lond. & Edinb. Phil. Mag. (3), I., 1833, p. 335.

Thoracantha Latreille, Fam. nat. règn. anim., 1825. (Type *T. latreillei* Guèrin.)

Thusanus Walker (= *Thysanus* Haliday), Notes on Chalc., pt. 7, p. 114, fig.

Thysanus Haliday, Ann. Nat. Hist., IV., 1840, p. 234. (Type *T. ater* Haliday.)

Tineobius Ashmead, Proc. Ent. Soc. Washington, IV., 1896, p. 14. (Type *T. citra* Ashm.)

Tincomyza Rondani (= ♀ *Eulophus* Geoffroy), Bull. Soc. ent. Ital., IV., 1872, p. 205.

Tineophaga Rondani (= ♂ *Eulophus* Geoffroy), Ann. Soc. nat. Modena, III., 1868, p. 22.

Tineophoctonus Ashmead, Proc. U. S. Nat. Mus., XXII., 1900, pp. 328, 351. (Type *Phænodiscus armatus* Ashm.)

Tityros Walker, List Chalc. Brit. Mus., II., 1848, p. 164. (Type *T. porcia* Walk. ♂.)

Tomocera Howard, Rep. U. S. Dept. Agric., 1880–81, p. 368. (Type *T. californica* How.)

Tomoligon Rondani (=? *Trichoporus* Först.), Bull. Soc. ent. Ital., IX., 1877, p. 200.

Torymoides Walker, Notes on Chalc., Pt. 3, 1871, p. 37. (Type *T. amabilis* Walker.)

Torymus Dalman, Svensk. Vet.-Akad. Handl., XLI., 1820, p. 135. (Type *Ichneumon bedeguaris* Linné.)

Toxeuma Walker, Ent. Mag., I., 1833, pp. 371, 378. (Type *T. erica* Walk.)

Tribæus Förster, Verh. d. naturh. Ver. pr. Rheinl., XVII., 1860, p. 93. (Type *T. punctatus* Först.)

Trichoporus Förster, Hym. Stud., II., 1856, p. 84. (Type unknown.)

Trichasius Provancher (= *Bæus*, Haliday, Proctotrypoidea), Add. Fn. Hym. du Can. Hym., 1887, p. 209.

Trichaulus Mayr, Verh. Zool.-bot. Gesell. Wien, XXXV., 1885, pp. 157, 150, 225. (Type *T. versicolor* Mayr.)

Trichencyrtus Ashmead, gen. nov., ante, p. 291. (Type *T. chapadæ* Ashm.)

Trichoceras Ratzeburg (= *Tetrastichus* Haliday), Ichn. d. Forstius., I., 1848, p. 171.

Trichoglenes Thomson, Hym. Skand., V., 1878, p. 149. (Type *Pteromalus complanatus* Ratzeb.)

Trichogramma Westwood, Phil. Mag. (3), II., 1833, p. 444. (Type *T. evanescens* Westw.)

Trichomalus Thomson, Hym. Skand., V., 1878, p. 134. (Type *T. punctinucha* Thoms.)

Trichomasthus Thomson (= *Sceptrophorus* Förster), Hym. Skand., IV., 1875, p. 142.

Trichoxenia Kirby, Journ. Linn. Soc. London, Zoöl., XVII., 1883, p. 62. (Type *Haltiecella cineraris* Walk.)

Tricoryna Kirby, Journ. Linn. Soc. London, Zoöl., XX., 1886, p. 29. (Type *Eucharis jeollo* Walk.)

Tricosyphus Förster (= *Cerocephala* Westwood), Hym. Stud., II., 1856, p. 46.

Tridymus Ratzeburg, Ichn. d. Förstius., II., 1848, p. 183. (Type *Pteromalus salicis* Nees.)

Trigonoderus Westwood, Lond. & Edinb. Phil. Mag. (3), I., 1832, p. 127. (Type *T. princeps* Westw.)

Trigonogastra Ashmead, gen. nov., ante, p. 330. (Type *T. aurata* Ashm.)

Trigonura Sichel, Ann. Soc. ent. France (4), V., 1865, p. 376. (Type *T. cressicauda* Sichel.)

Trimorphocerus Dahlbom (= ♂ *Bothriothorax* Ratzeburg), Öfvers. Svensk. Vet.-Akad. Förh., XIV., 1857, p. 292.

Tripedias Förster (= *Eunotus* Walker), Hym. Stud., II., 1856, p. 60.

Triphasius Förster (= *Thysanus* Haliday), Hym. Stud., II., 1856, p. 83.

Trismiera Ashmead, g. nov., ante, p. 252. (Type *Smicra contracta* Walk.)

Tritypus Ratzeburg (=*Eunotus* Walker), Ichn. d. Forstius., III., 1852, p. 227.

Trogocarpus Rondani (=*Megastigmus* Dalman), Bull. Soc. ent. Ital., IX., 1877, p. 204.

Tropidogastra Ashmead, gen. nov., ante, p. 323. (Type *T. arizonensis* Ashm.)

U.

Uriella Ashmead, Trans. Amer. Ent. Soc., XXIII., 1896, p. 221. (Type *U. rufipes* Ashm.)

Urocryptus Westwood (= *Eupelminus* Dalla Torre), Intro. Mod. Class. Ins., II., 1840; synop. p. 72.

Uroderostenus Ashmead, gen. nov., ante, p. 343. (Type *M. pleuralis* Ashm.)

Uroentedon Ashmead, gen. nov., ante, p. 341. (Type *U. verticellata* Ashm.)

Urolepis Walker, List Chalc. Brit. Mus., I., 1846, p. 26. (Type *U. maritimus* Walk.)

Uromelia Kirby, Journ. Linn. Soc. London, Zoöl., XX., 1886, p. 33. (Type *Thoracantha striata* Perty.)

V.

Valkerella Westwood (= *Walkerella* Westw.), Proc. Linn. Soc. London, Zoöl. (2), I., 1878, p. 584.

W.

Walkerella Westwood, Trans. Ent. Soc. London, 1883, p. 32. (Type *W. timeraria* Westw.)
Websterellus Ashmead, Bull. No. 1, Ohio Exper. Sta., 1893, p. 164. (Type *W. tritici* Ashm.)

X.

Xanthomelanus Ashmead, gen. nov., ante, p. 251. (Type *Chalcis dimidiate* Fabr.)
Xanthosoma Ashmead, Entom. Amer., IV., 1888, pp. 42, 43. (Type *X. nigricornis* Ashm.)
Xenocrepis Förster, Hym. Stud., II., 1856, p. 64. (Type unknown.)

Z.

Zagrammosoma Ashmead, n. n. for *Hippocchalus* Ashm. preoc., ante, p. 354. (Type *H. multilineatus* Ashm.)
Zaomma Ashmead, Proc. U. S. Nat. Mus., XXII., 1900, p. 340. (Type *Encyrtus argentipes* How.)
Zaommomyia Ashmead, gen. nov., ante, p. 340. (Type *Chrysochris stigmata* Ashm.)
Zapachia Förster, Verh. d. naturh. Ver. pr. Rheinl., XXXV., 1878, p. 47. (Type *Z. spiloptera* Först.)
Zarhopalus Ashmead, Proc. U. S. Nat. Mus., XXII., 1900, p. 342. (Type *Z. sheldoni* Ashm.)

PART II. SOUTH AMERICAN CHALCIDOIDEA, WITH DESCRIPTIONS OF NEW SPECIES IN THE CARNEGIE MUSEUM.

SUPERFAMILY VII. *CHALCIDOIDEA.*

FAMILY LX. AGAONIDÆ.

SUBFAMILY 1. AGAONINÆ.

Genus BLASTOPHAGA Gravenhorst.

BLASTOPHAGA BIFOSSULATA Mayr.

Blastophaga bifossulata Mayr, Verh. Zool.-bot. Gesell., XXXV., 1885, p. 181, ♂ ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 324.

Brazil: Blumenau (Dr. Fritz Müller).

BLASTOPHAGA BRASILIENSIS Mayr.

Blastophaga brasiliensis Mayr, Verh. Zool.-bot. Gesell., XXXV., 1885, p. 180, ♂ ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 324.

Brazil: Blumenau (Dr. Fritz Müller).

Genus TETRAPUS Mayr.

TETRAPUS AMERICANUS Mayr.

Tetrapus americanus Mayr, Verh. Zool.-bot. Gesell., XXXV., 1885, p. 188, ♂ ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 323.

Brazil: Blumenau (Dr. Fritz Müller).

Genus EISENIA Ashmead.

EISENIA FLAVISCAPA, sp. nov.

Female.—Length about 1 mm.; ovipositor as long as the abdomen and the thorax united. Head and thorax black, polished; hypopygium prominent, piceous; scape broadly dilated, about twice as long as wide, yellow, the pedicel and the flagellum dark brown, the process of the first funicle joint long and acute; legs brownish-yellow, the front and hind femora especially above brownish-piceous; wings hyaline, with short ciliæ at apex, the veins pale yellowish. The head is a little longer than wide, with a deep broad frontal furrow, the eyes oval; middle tarsi very slightly longer than their tibiæ.

Brazil: Para. One specimen.

FAMILY LXI. TORYMIDÆ.

SUBFAMILY I. IDARNINÆ.

Genus IDARNES Walker.

IDARNES BREVICOLLIS (Mayr).

Tetragonaspis brevicollis Mayr, Verh. Zool.-bot. Gesell., XXXV., 1885, p. 209, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 320.

Brazil: St. Catharina (Dr. Fritz Müller).

IDARNES CARME Walker.

Idarnes carme Walker, Ann. & Mag. Nat. Hist., XII., 1843, p. 47, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 317.

Tetragonaspis flavicollis Mayr, Verh. Zool.-bot. Gesell., 1885, p. 207, ♀.—Dalla Torre, Cat. Hym., V, 1898, p. 320.

Ganosoma robustum Mayr, Verh. Zool.-bot. Gesell., XXXV., 1885, p. 204, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 321.

West Indies: Grenada, St. Vincent; Brazil: St. Catharina.

IDARNES CORIARIA (Mayr).

Tetragonaspis coriaria Mayr, Verh. Zool.-bot. Gesell., XXXV., 1885, p. 209, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 320.

Brazil: St. Catharina (Dr. Fritz Müller).

IDARNES FORTICORNIS (Mayr).

Tetragonaspis forticornis Mayr, Verh. Zool.-bot. Gesell., XXXV., 1885, p. 208, ♀. Dalla Torre, Cat. Hym., V., 1898, p. 320.

Brazil: St. Catharina (Dr. Fritz Müller).

IDARNES GRACILICORNIS (Mayr).

Ganosoma attenuatum Mayr, Verh. Zool.-bot. Gesell., XXXV., 1885, p. 204, ♂.

Tetragonaspis gracilicornis Mayr, Verh. Zool.-bot. Gesell., XXXV., 1885, p. 208, ♀.

Brazil: St. Catharina (Dr. Fritz Müller).

IDARNES PARALLELA (Mayr).

Ganosoma parallelum Mayr, Verh. Zool.-bot. Gesell., XXXV., 1885, p. 204, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 320.

Brazil: St. Catharina (Dr. Fritz Müller).

IDARNES PUNCTATA (Mayr).

Tetragonaspis punctata Mayr, Verh. Zool.-bot. Gesell., XXXV., 1885, p. 209, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 320.

Brazil: St. Catharina (Dr. Fritz Müller).

Genus TRICHAULUS Mayr.

TRICHAULUS VERSICOLOR Mayr.

Trichaulus versicolor Mayr, Verh. Zool.-bot. Gesell., XXXV., 1885, p. 226, ♀; T. 13, f. 38.—Fr. Müller, Kosmos, XVIII., 1886, pp. 54, 55.

Critogaster singularis Mayr, Verh. Zool.-bot. Gesell. Wien, XXXV., 1885, p. 200, ♂; T. 12, f. 24.—Fr. Müller, Kosmos, XVIII., 1886, pp. 54, 55.—Dalla Torre, Cat. Hym., V., 1898, p. 321.

Brazil: St. Catharina (Dr. Fritz Müller).

TRICHAULUS FLAVESCENS (Müller).

Critogaster flavescens Müller, Ent. Nachr., XIII., 1887, p. 161, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 321.

Brazil: Rio de Janeiro (Dr. Emil A. Göldi).

TRICHAULUS GÖLDIANA (Müller).

Critogaster göldiana Müller, Ent. Nachr., XIII., 1887, p. 161, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 321.

Brazil: Rio de Janeiro (Dr. Emil A. Göldi).

TRICHAULUS NUDA (Mayr).

Critogaster nuda Mayr, Verh. Zool.-bot. Gesell., XXXV., 1885, p. 201, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 321.

Brazil: St. Catharina (Dr. Fritz Müller).

TRICHAULUS PILIVENTRIS (Mayr).

Critogaster piliventris Mayr, Verh. Zool.-bot. Gesell. Wien, XXXV., 1885, p. 201, ♂; T. 12, f. 25.—Fr. Müller, Kosmos, XVIII., 1886, p. 55.—Fr. Müller, *op. cit.*, XIX., 1886, p. 54.—Dalla Torre, Cat. Hym., V., 1898, p. 321.

Brazil: St. Catharina (Dr. Fritz Müller).

Genus COLYOSTICHUS (Mayr).

COLYOSTICHUS LONGICAUDIS Mayr.

Colyostichus longicaudis Mayr, Verh. Zool.-bot. Gesell. Wien, XXXV., 1885, p. 239, ♀.

Heterandrium longipes Mayr, Verh. Zool.-bot. Gesell. Wien, XXXV., 1885, pp. 234–235, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 316, ♂♀.

Brazil: St. Catharina (Dr. Fritz Müller).

SUBFAMILY II. TORYMINÆ.

Genus LOCHITES Förster.

LOCHITES AURICEPS Ashmead.

Lochites auriceps Ashmead, Journ. Linn. Soc. London, Zool., XX., 1894, p. 153, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 284.

W. I.: St. Vincent, Grenada; Brazil: Chapada, in April. Three specimens.

LACHITES SULCIUS (Walker).

Callimome sulcius Walker, Monogr. Chalc., II., 1839, p. 64, ♀.

Torymus sulcius Dalla Torre, Cat. Hym., V., 1898, p. 313.

Brazil: Bahia; Chapada, in April. Three specimens.

Genus SYNTOMASPIS Förster.

SYNTOMASPIS CABURA (Walker).

Callimome caburus Walker, Monogr. Chalc., II., 1864, p. 64, ♀♂.

Torymus caburus Dalla Torre, Cat. Hym., V., 1898, p. 301.

Brazil: Bahia (Walker).

SYNTOMASPIS APRILIS, sp. nov.

Female.—Length 2.5 mm.; ovipositor nearly as long as the body. Blue, with a very faint greenish tinge, the abdomen with a decided æneous tinge. Head and thorax shagreened, with a thimble-like punctuation; ocelli pale; eyes brown; scape yellowish, the pedicel æneous, the flagellum dark brown; front and middle femora above and the hind femora blue, the front and middle tibiæ, their tarsi and the hind tarsi, yellowish, the hind tibiæ dark brownish. Wings hyaline, the tegulæ and veins yellowish.

Brazil: Carumba, in April. Two female species.

SYNTOMASPIS HOLCASPOIDEA, sp. nov.

Female.—Length 2 mm.; ovipositor longer than the abdomen. Robust, blue, the head and the thorax with a thimble-like punctuation; ocelli red, placed nearly in a straight line; eyes brown; scape, pedicel, tips of front and middle femora, their tibiæ and tarsi and the hind tarsi, yellowish, the front and middle femora, except tips, and the hind tibiæ brownish-piceous, the hind femora blue; flagellum brown-black. Wings hyaline, the veins yellowish.

Male.—Length 1.2 to 1.5 mm. Agrees well with the ♀ in color and sculpture, except that the scape of the antennæ alone is yellow, the pedicel being æneous black. The abdomen is small, oval.

Brazil: Chapada, in April; Corumba, in May. Two female and two male specimens.

Syntomaspis flavicollis, sp. nov.

Female.—Length 2.6 mm.; ovipositor longer than the body. Bluish-green, the mesonotum posteriorly and the scutellum violaceous, the scape of antennæ, the prothorax, the legs, including coxæ, the tegulæ, venation of front wings, metapleura and the venter yellow or yellowish; the flagellum is brown-black; eyes very large, oval, brown. The head and the thorax are delicately shagreened, the scutellum with some sparse punctures beyond the apical cross-furrow. Wings hyaline, the veins pale yellowish.

Brazil: Chapada, in September. One female specimen.

Genus TORYMUS Dalman.

Torymus cumelis (Walker).

Callimome cumelis Walker, Ann. & Mag. Nat. Hist., X., 1842, p. 114, ♀.—Spinola, Gay: Hist. fis. Cuba, Zool., VI., 1851, p. 464.

Torymus cumelis Dalla Torre, Cat. Hym., V., 1898, p. 308.

Chile: Valparaiso (Walker).

Torymus nonacris (Walker).

Callimome nonacris Walker, Ann. & Mag. Nat. Hist., X., 1842, p. 113, ♀.—Spinola, Gay: Hist. fis. Chile, Zool., VI., 1851, p. 463, ♀.

Torymus nonacris Dalla Torre, Cat. Hym., V., 1898, p. 311.

Chile: Valparaiso, Walker; Brazil: Corumba, in April. One female specimen.

Torymus chapadæ, sp. nov.

Female.—Length 2 mm.; ovipositor a little longer than the body. Head and thorax above greenish-blue, the pleura, metathorax, coxæ, femora and abdomen blue, the scape, tibiæ and tarsi yellowish, the flagellum brown-black, the ocelli pale, the eyes brown. The head, thorax and scutellum are shagreened. Wings hyaline, the tegulæ and veins pale yellowish. The abdomen is very short, higher than long, but this may be due to an accident.

Brazil: Chapada, highlands, in April. One female specimen.

Torymus smithi, sp. nov.

Female.—Length 3 mm.; ovipositor longer than the body. Blue, the head and thorax with a thimble-like punctuation, the tip of the scutellum smooth and metallic green; the scape, tegulæ, veins and most of the legs, except the coxæ and the femora, are yellowish, the coxæ and the hind femora are blue, the front and middle femora above and basally are brownish.

Brazil: Chapada, in April; Para, in June. Two female specimens.

TORYMUS SYLVICOLA, sp. nov.

Female.—Length 8 mm.; ovipositor about the length of the body. Head and thorax metallic green, rather coarsely shagreened, the metathorax blue, the abdomen æneous, with a brownish shade; scape and pedicel yellowish, the flagellum light brown; legs, except the hind coxæ at basal two thirds which are metallic greenish, all brownish-yellow. Wings hyaline, the tegulæ and the veins pale yellowish.

Brazil: Chapada, in forests in April and October. Two specimens.

SUBFAMILY III. MONODONTOMERINÆ.

Genus MONODONTOMERUS Westwood.

MONODONTOMERUS PHORMIO (Walker).

Torymus phormio Walker, Ann. & Mag. Nat. Hist., X., 1842, p. 113, ♀.—Spinola, Gay: Hist. fis. Chile, Zool., VI., 1851, p. 466.—Dalla Torre, Cat. Hym., V., 1898, p. 311.

Monodontomerus phormio Walter, Notes on Chalc., II, p. 28.

Chile: Valparaiso.

Genus DIAMORUS Walker.

This genus should occur in South America, but I have seen no representatives of it in any of the collections examined by me. The species recorded and described by Dr. Mayr as *Diamorus* resemble genuine species very closely, but they really represent the females of Mayr's genus *Physothorax*.

Genus PHYSOTHORAX Mayr.

PHYSOTHORAX ANNULIGER Mayr.

Physothorax annuliger Mayr, Verh. Zool.-bot. Gesell. Wien, XXXV., 1885, p. 198, ♂.—Dalla Torre, Cat. Hym., V, 1898, p. 321.

Brazil: St. Catharina.

PHYSOTHORAX BIARTICULATUS (Mayr).

Nannocerus biarticulatus Mayr, Verh. Zool.-bot. Gesell. Wien, XXXV., 1885, p. 196, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 321.

Brazil: St. Catharina.

PHYSOTHORAX VARIABILIS (Mayr).

Diamorus variabilis Mayr, Verh. Zool.-bot. Gesell. Wien, XXXV., 1885, p. 228, ♀. —Dalla Torre, Cat. Hym., V., 1898, p. 291.

Physothorax dorsiger Mayr, Verh. Zool.-bot. Gesell. Wien, XXXV., 1885, p. 197 (wingless ♂).—Dalla Torre, Cat. Hym., V., 1898, p. 321.

PHYSOTHORAX MAYRI, sp. nov.

Female.—Length, 2.6 mm.; ovipositor about as long as the body. Similar to *P. variabilis* Mayr, but the punctures of the head and thorax are not so close, the scape and the pedicel being yellow, the prothorax being wholly blue, not all yellow or in part, as in *P. variabilis*, the femora, except at tips, being mostly blue, while the front wings have a brownish fascia beneath the stigmal vein, a character found in no other species.

Brazil.

Genus PLESIOSTIGMA Mayr.

PLESIOSTIGMA BICOLOR Mayr.

Plesiostigma bicolor Mayr, Verh. Zool.-bot. Gesell. Wien, XXXV, 1885, p. 227, ♂; Taf. XIII., f. 39, 40.—Dalla Torre, Cat. Hym., V., 1898, p. 316.

Brazil: Blumenau (Dr. Fritz Müller).

PLESIOSTIGMODES Ashmead, gen. nov.

This genus differs from all the other genera in the subfamily by the much swollen front femora, by the very long pronotum, which is longer than the mesonotum, and by the antennæ having *two* ring-joints.

PLESIOSTIGMODUS BRASILIENSIS, sp. nov.

Female.—Length 1.5 mm. Head bluish æneous, with some minute punctures, the thorax more decidedly æneous, with a decidedly metallic greenish tinge on the mesonotum and on the scutellum, and with some sparse, minute punctures; the thickened front and hind femora are also more or less greenish, the rest of the legs, except the coxæ, and the scape of the antennæ being yellowish, the pedicel and the flagellum brown-black; the abdomen, except a bluish tinge basally, is æneous black; it is sessile, oblong and tapers off at apex, the first segment being the longest and having a slight median incision at apex. Wings hyaline, the tegulæ and veins pale yellowish.

Brazil: Corumba, lowland in May. One specimen.

HEMITORYMUS Ashmead, gen. nov.

This genus is allied to *Cryptopristus* Förster, but is easily separated by the hind femora being feebly serrate, *without* a distinct tooth, and by the venation in the front wings which agrees with *Torymus* and is quite different from *Cryptopristus*.

HEMITORYMUS THORACICUS, sp. nov.

Female.—Length 4 mm., ovipositor much longer than the body. Head and metathorax metallic greenish, the metapleura blue, the rest of the thorax, the antennal scape and pedicel, the legs, except the hind coxæ at base behind and the venter, yellow; the abdomen above is more or less tinged with brown; the flagellum is long brown-black. The head and the thorax are shagreened and have a shallow thimble-like punctuation. The metathorax is smooth with distinct spiracular sulci, the spiracles being large, oblong-oval. The wings are hyaline, with the tegulæ and the veins pale yellowish. The abdomen is oblong, as long as or a little longer than the head and the thorax united, and subcompressed along the venter basally.

Brazil: Chapada, in September. One specimen.

SUBFAMILY V. MEGASTIGMINÆ.

Genus MEGASTIGMUS Dalman.

I have seen a single specimen of this genus taken in Brazil not in good condition. It ought to be well represented in South America.

SUBFAMILY VI. ORMYRINÆ.

Genus ORMYRUS Westwood.

ORMYRUS BRASILIENSIS, sp. nov.

Female.—Length 1.7 mm. Blue; ocelli red; the extreme base of the scape, the trochanters, knees, tips of the tibiæ and the tarsi, pale yellowish, the rest of the tibiæ brownish piceous; wings hyaline, the veins light brownish.

The head and the thorax are almost smooth, but under a strong lens exhibit five transverse aciculations. The third body segment of the abdomen has two transverse rows of punctures at base, the fourth has three rows, the punctures on the fifth are large and arranged in about four rows, while the sixth has an indistinct row at the extreme base.

Brazil: Chapada, in April. One specimen. This is the first species to be described from South America.

SUBFAMILY IV. PODAGRIONINÆ.

Genus PODAGRION Spinola.

PODAGRION BRASILIENSIS Howard.

Podagrion brasiliensis Howard, Journ. Linn. Soc. London, Zool., XXV., 1896, p. 83, ♀.—Howard, Journ. Linn. Soc. London, Zool., XXVI., 1897, p. 132.—Dalla Torre, Cat. Hym., V., 1898, p. 369.

Brazil: Santarem; Chapada. West Indies: Grenada.

PODAGRION MELLEUS (Westwood).

Palmon melleus Westwood, Trans. Ent. Soc. London, IV., 1847, p. 260.

Podagrion melleus Walker, Notes on Chalc., Pt. 2, 1871, p. 28.—Dalla Torre, Cat. Hym., V., 1898, p. 369.

Brazil.

Host. Orthop.: eggs of *Mantis brasiliana* L.

PODAGRION CYANEUS, sp. nov.

Female. — Length about 3 mm. Blue (sometimes bronzed green above); the antennæ, except the club which is black, the legs, except the coxæ basally and the front and hind femora at basal two thirds which are blue, the abdomen along the venter and at apex, are yellowish. Wings hyaline, the tegulæ yellow, the veins light brown. The flagellum is long, strongly clavate, while the swollen hind femora are armed with from ten to twelve teeth.

Brazil: Santarem. One specimen.

Differs from *P. brasiliensis* Howard in color and by the more numerous teeth on the hind femora.

FAMILY LXII. CHALCIDIDÆ.

SUBFAMILY I. LEUCOSPIDINÆ.

Genus POLISTOMORPHA Westwood.

POLISTOMORPHA FASCIATA Westwood.

Polistomorpha fasciata Westwood, Thes. Ent. Oxon., 1874, p. 134; Pl. XXV., f. 3.—Dalla Torre, Cat. Hym., V., 1898, p. 405.

Brazil: Amazon.

POLISTOMORPHA SPHEGOIDES Walker.

Polistomorpha sphegoides Walker, Journ. Ent., I., 1860–61, p. 22.—Westwood, Thes. Ent. Oxon., 1874, p. 134; Pl. XXV., fig. 1.—Schletterer, Berlin. ent. Zeitschr., XXV., 1890, p. 297.—Dalla Torre, Cat. Hym., V., 1898, p. 405.

Brazil.

POLISTOMORPHA SURINAMENSIS Westwood.

Polistomorpha surinamensis Westwood, Germar, Zeitsch. f. Entom., I., 1839, p. 265, ♀.—Westwood, Thes. Ent. Oxon, 1874, p. 133; Pl. XXV., f. 2.—Schletterer, Berlin. ent. Zeitschr., XXV., 1890, p. 295.—Dalla Torre, Cat. Hym., V., 1898, p. 405.

Brazil: Surinam.

Genus LEUCOSPIS Fabricius.

LEUCOSPIS AFFINIS Say.

Leucospis affinis Say, Keating's Narrat. Exped., II., 1824, App., p. 327, ♀♂.—Leconte's Ed. Say's Works, I., 1859, p. 220.—Cresson, Trans. Am. Ent. Soc., IV., 1872, p. 32.—Provancher, Natur. Canad., XII., 1881, p. 268, ♀; fig. 12.—Provancher, Faun. ent. Can. Hym., 1883, p. 567; fig. 83.—Schletterer, Berlin. ent. Zeitschr., XXXV., 1890, pp. 172, 175, 285.—Dalla Torre, Cat. Hym., V., 1898, p. 406.

Leucospis subnotata Westwood, Ent. Mag., II., 1834, p. 215, ♀.—Westwood, Zeitschr. f. Ent., I., 1839, p. 250.

Leucospis fraterna Say, Journ. Bost. Soc. Nat. Hist., I., 1836, p. 269.—Leconte's Ed. Say's Works, I., 1859, p. 718.

Leucospis duræi Westwood, Zeitschr. f. Ent., I., 1839, p. 251, ♀.

Leucospis basalis (Klug) Westwood, Zeitschr. f. Ent., I., 1839, p. 264.

Leucospis pœyi Guerin, Iconogr. régn. anim., VII., Ins., 1845, p. 414, ♀.—La Sagra's Hist. fis. Cuba, VII., 1850, p. 754.—Cresson, Proc. Ent. Soc. Phila., IV., 1865, p. 177.—Cresson, Trans. Am. Ent. Soc., IV., 1872, p. 32.

Leucospis canadensis Walker, Journ. Entom., I., 1860, p. 17.

Leucospis tapayosa Walker, Journ. Entom., I., 1860, p. 21.

Brazil (*teste* Schletterer).

LEUCOSPIS CAYENNENSIS (Westwood).

Metallopsis cayennensis Westwood, Germar's Zeitschr. f. Entom., I., 1839, p. 264, ♂; T. 4, f. 4.

Leucospis mexicana Walker, Journ. Entom., I., 1860, p. 20, ♀.—Cresson, Trans. Am. Ent. Soc., IV., 1872, p. 30.—Cameron, Biol. Centr.-Amer. Hym., I., 1883, p. 76; Pl. 4, f. 11.

Leucospis tomentosa Kirby, Journ. Linn. Soc. London, Zool., XVII., 1882, p. 70, ♀.

Leucospis cayennensis Schletterer, Berlin. ent. Zeitschr., XXXV., 1890, pp. 172, 174 and 265; Pl. 6, f. 24.—Dalla Torre, Cat. Hym., V., 1898, p. 407.

Brazil.

LEUCOSPIS COXALIS Kirby.

Leucospis coxalis Kirby, Ann. & Mag. Nat. Hist. (5), XV., 1885, p. 243, ♀.—Waterhouse, Aid Idend. Ins., Pt. XXVII., 1886; Pl. 169, f. 1, ♂.—Schletterer, Berlin. ent. Zeitschr., XXV., 1890, p. 271.—Dalla Torre, Cat. Hym., V., 1898, p. 407.

Argentina: Buenos Aires.

LEUCOSPIS CUPREOVIRIDIS Westwood.

Leucospis cupreoviridis Westwood, Thes. Ent. Oxon., 1874, p. 135; Pl. XXV., f. 5.—Schletterer, Berlin. ent. Zeitschr., XXXV., 1890, p. 261.—Dalla Torre, Cat. Hym., V., 1898, p. 408.

New Grenada.

LEUCOSPIS DISTINGUENDA Schletterer.

Leucospis distinguenda Schletterer, Berlin. Ent. Zeitschr., XXXV., 1890, pp. 172 and 269, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 408.

Brazil.

LEUCOSPIS EGAIA Walker.

Leucospis egaia Walker, Journ. Entom., I., 1860, p. 20, ♀.—Schletterer, Berlin. ent. Zeitschr., XXXV., 1890, p. 273.—Dalla Torre, Cat. Hym., V., 1898, p. 409.

Brazil: Ega.

LEUCOSPIS HOPEI Westwood.

Leucospis hopei Westwood, Ent. Mag., II., 1834, p. 215, ♂.—Westwood, Germar's Zeitschr. f. Ent., I., 1839, p. 258; T. 2, f. 3.—Spinola, Gay: Hist. fis. Chile, Zool., VI., 1851, p. 470; T. 4, f. 3.—Schletterer, Berlin. ent. Zeitschr., XXXV., 1890, pp. 171, 174 and 280; T. 6, f. 22.

Chile.

LEUCOSPIS IGNOTA Walker.

Leucospis ignota Walker, Journ. Entom., I., 1860, p. 22, ♂.—Schletterer, Berlin. ent. Zeitschr., XXXV., 1890, p. 289.—Dalla Torre, Cat. Hym., V., 1898, p. 411.

Brazil?

LEUCOSPIS LEUCOTELUS Walker.

Leucospis leucotelus Walker, Ann. & Mag. Nat. Hist. (2), IX., 1852, p. 41, ♀.—Schletterer, Berlin. ent. Zeitschr., XXXV., 1890, pp. 172 and 274.—Dalla Torre, Cat. Hym., V., 1898, p. 412.

Brazil: Para.

LEUCOSPIS PROPINQUA Schletterer.

Leucospis propinqua Schletterer, Berlin. ent. Zeitschr., XXXV., 1890, pp. 171 and 277, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 413.

Brazil.

LEUCOSPIS SANTAREMA Walker.

Leucospis santarema Walker, Journ. Entom., I., 1860, p. 20, ♀.—Schletterer, Berlin. ent. Zeitschr., XXXV., 1890, p. 279.—Dalla Torre, Cat. Hym., V., 1898, p. 413.

Brazil: Santarem.

LEUCOSPIS SPEIFERA Walker.

Leucospis speifera Walker, Journ. Entom., I., 1860, p. 21, ♀.—Schletterer, Berlin. ent. Zeitschr., XXXV., 1890, p. 272.—Dalla Torre, Cat. Hym., V., 1898, p. 413.

Brazil: Ega.

LEUCOSPIS ENDERLEINI, sp. nov.

(Plate XXXI., Fig. 1.)

Female.—Length 7 mm.; ovipositor short, not extending to the base of the third abdominal segment. Color dull bronze, the head in front and the pleura bronzy green, with whitish hairs; a streak at sides, along the front margin and along the hind margin of the pronotum, yellow or yellowish, another streak along the sides of the mesonotum and along its hind margin just in front of the scutellum, and a yellow band along the hind femora above and beneath, and along the outer face of the hind tibiæ.

The abdomen at the apex of the short second segment, the apex of the long third segment, and on the apical segments is metallic greenish and clothed with glittering white hairs.

Brazil: Santarem in March. One female. Named in honor of Dr. Günther Enderlein.

This species is allied to *L. cayennensis* Westw.

Genus EXOCHLÆNUS Shipp.

EXOCHLÆNUS ANTHIDIOIDES (Westwood).

Leucospis anthidioides Westwood, Thes. Ent. Oxon., 1874, p. 135; pl. 25, f. 7.—Schletterer, Berlin. ent. Zeitschr., XXXV., 1890, p. 257.

Exochlœnus anthidioides Shipp, The Entom., XXVII., 1894, p. 245.—Dalla Torre, Cat. Hym., V., 1898, p. 404.

Brazil.

SUBFAMILY II. CHALCIDINÆ.

TRIBE I. *Chalcidini.*

Genus PHASGONOPHORA Westwood.

PHASGONOPHORA BATESII Kirby.

Phasgonophora batesii Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 74, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 371.

Brazil: Santarem.

PHASGONOPHORA CAUDATA (Sichel).

Conura caudata Sichel, Blanchard, Hist. Nat. Ins., III., 1840, p. 256.

Chalcis caudatus Guérin, Iconogr. régn. Anim., VII., 1845, Ins., p. 413; tab. 67, f. 6.

Phasgonophora caudata Sichel, Ann. Soc. ent. France (4), V., 1865, pp. 358 and 371, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 371.

Brazil.

PHASGONOPHORA CONDALUS Walker.

Phasgonophora condalus Walker, Entom., I., 1841, p. 134, ♀.—Sichel, Ann. Soc. ent. France (4), V., 1865, pp. 358 and 365.—Dalla Torre, Cat. Hym., V., 1898, p. 371.

Phasgonophora caudatus Guérin, Iconogr. régn. Anim., VII., 1845, Ins., p. 413 (def. typogr.).

Phasgonophora thoracica Sichel, Ann. Soc. ent. France (4), V., 1865, pp. 358 and 365.

Brazil (Mr. Curtis' collection).

Genus TRIGONURA Sichel.

TRIGONURA DORSALIS, sp. nov.

Female.—Length 7.4 mm. Entirely black, except the pronotum, the mesonotum and the scutellum which are red, and the front and middle knees, tips of tibiæ, and all the tarsi which are yellow. Wings hyaline, the tegulæ yellow, the veins brown

Brazil: Santarem. Three specimens.

TRIGONURA DENTIPES (Fabricius).

Chalcis dentipes Fabricius, Syst. Piez., 1804, p. 165.—Dalla Torre, Cat. Hym., V., 1898, p. 387.

South America.

Genus THAUMATELIA Kirby.

THAUMATELIA SEPARATA (Walker).

Chalcis separata Walker, Trans. Ent. Soc. London (3), I., 1862, p. 352, ♀.

Thaumatelia separata Kirby, Journ. Linn. Soc. London, XVII., 1883, p. 60; pl. 4, f. 9, 10.—Dalla Torre, Cat. Hym., V., 1898, p. 372.

Brazil: Ega.

THAUMATELIA PULCHRIPENNIS, sp. nov.

(Plate XXXI., Fig. 2.)

Female.—Length 15 mm. Black; the abdomen, except the long stylus which is black, rufous; legs, except the hind femora which are rufous, black, the knees and tarsi, except the middle and hind pairs basally, honey-yellow. Wings with the apical half fuscous, the basal half yellowish and a large yellowish spot at tip of marginal vein, within the space formed by the postmarginal and stigmal veins. The seventh abdominal segment and the stylus basally are coarsely pitted or punctate. The antennæ are long, filiform, the first joint of the flagellum being longer than the scape. The hind femora are armed with 7 moderate-sized teeth. The head and thorax, except the pronotum laterally, the middle lobe of the mesonotum and the mesopleura beneath the insertion of the front wings, which are smooth and shining, with only a few punctures, are closely punctate or sculptured.

Brazil: Chapada, Para, and Santarem. Five specimens.

Genus PSEUDOCHALCIS Kirby.

PSEUDOCHALCIS DECLARATOR (Walker).

Halticella declarator Walker, Trans. Ent. Soc. London (3), I., 1862, p. 360, ♀.
Pseudochalcis declarator Kirby, Journ. Linn. Soc. London, XVII., p. 61.—Dalla Torre, Cat. Hym., V., 1898, p. 394.

Brazil: Ega.

PSEUDOCHALCIS CONICA sp. nov.

Female.—Length 4.5–5 mm. Black, coarsely punctate, the tegulæ, tips of femora, the front tibiæ, except a black spot behind, middle and hind tibiæ, except a broad black annulus at the middle, and all tarsi sulphur yellow, the abdomen conically pointed, longer than the head and thorax united.

Brazil: Santarem, in March and May. Four specimens.

PSEUDOCHALCIS FLAVOPICTA, sp. nov.

Male.—Length 5.5 mm. Black, coarsely punctate, the front orbits, face below insertion of the antennæ, scape, two large spots on dorsum of pronotum, a line on each side of the middle mesothoracic lobe, a spot on the outer front angle of the lateral lobes, a line on each side of the scutellum, the tegulæ, a line on the mesopleura, a large spot on the metapleura, a spot at apex of metanotum, a large spot on each side of second segment of abdomen, and the legs, except as noted, yellow, the hind coxæ with a large spot above at base, and a large spot on the disk of the hind femora, black.

Brazil: Corumba and Santarem. Three specimens.

Genus STYPIURA Kirby.

STYPIURA CONIGASTRA (Perty).

Chalcis conigastra Perty, Delect. anim. artic., 1834, p. 134; Pl. XXVI., f. 16.—Spinola, Mem. accad. sc. Torino (2), XIII., 1851, p. 44.
Conura conigastra Blanchard, Hist. nat. Ins., III., 1840, p. 256.
Halticella erythrotelus Walker, Journ. Entom., I., 1861, p. 184.
Phasgonophora conigastra Sichel, Ann. Soc. ent. France (4), V., 1865, p. 363.

Stypiura conigastra Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 59.—Dalla Torre, Cat. Hym., V., 1898, p. 395.

Brazil: Amazon; Santarem. One specimen.

Genus EPITELIA Kirby.

EPITELIA ACULEATA (Walker).

Chalcis aculeata Walker, Journ. Entom., I., 1861, p. 184, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 385.

Brazil: Santarem. Four specimens.

EPITELIA BASALIS (Walker).

Halticella basalis Walker, Trans. Ent. Soc. London (3), I., 1862, p. 361, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 397.

Brazil: Santarem. Three specimens.

EPITELIA STYLATA (Walker).

(Plate XXXI., Fig. 3.)

Chalcis stylata Walker, Journ. Entom., I., 1861, p. 183, ♀.

Epitela stylata Kirby, Journ. Linn. Soc. London, XVII., 188.—Dalla Torre, Cat. Hym., V., 1898, p. 395.

Brazil: Santarem. One specimen.

Genus CHALCIS Fabricius.

CHALCIS ANNULATA Fabricius.

Chalcis annulata Fabricius, Syst. Ent., II., 1793, p. 197.—Syst., Piez., 1804, p. 167.—Lamarck, Hist. nat. anim. s. vert., IV., 1817, p. 153.—Id., Ed. 2^a, IV., 1835. p. 363.

Brachmyeria annulata Blanchard, Hist. nat. Insect., III., 1835, p. 393.

Chalcis annulatus Howard, Journ. Linn. Soc. London, Zool., XXV., 1894, p. 80, ♀♂.—Dalla Torre, Cat. Hym., V., 1898, p. 380.

Chalcis annulipes Walker, Ent. Mag., II., 1834, p. 29.

Chalcis ovata Say, Keating's Narrat. Exped., II., 1824, p. 326.—Leconte, Ed. Say's Works, I., 1859, p. 219.—Cresson, Trans. Am. Ent. Soc., IV., 1872, p. 59.—Litner's First Rep. Ins., New York, 1882, p. 86.—Cameron, Biol. Centr. Amer. Hym., I., 1884, p. 99; Pl. 4, f. 16.—Provancher, Add. Fn. du Canada, Hym., 1887, p. 190.

Leucospis integra Haldemann, Proc. Acad. Nat. Sci. Phila., II., 1844, p. 53, ♂.—Cresson, Trans. Am. Ent. Soc., IV., 1872, p. 35.—Schletterer, Berlin. ent. Zeitschr., XXXV., 1890, p. 291.—Dalla Torre, Cat. Hym., V., 1898, p. 411.

Chalcis incerta Cresson, Proc. Ent. Soc. Phila., IV., 1865, p. 101.

Brachymeria panamensis Holmgren, Eugenies Resa Ins., 1868, p. 437.

Chalcis flavipes Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 68.—Howard, in Scudder's Butterflies U. S., 1889, p. 1886; Pl. 88, figs. 14 and 15.

North and South America.

CHALCIS AUGARUS Walker.

Chalcis augarus Walker, The Entom., I., 1841, p. 134, ♀♂.—Dalla Torre, Cat. Hym., V., 1898, p. 386.

Brazil (Mr. Curtis' collection).

CHALCIS DECRETA Walker.

Chalcis decreta Walker, Trans. Ent. Soc. London (3), I., 1862, p. 352, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 381.

Brazil: Santarem (Bates); Chapada, March.

CHALCIS EURYTOMOIDES Walker.

Chalcis eurytomoides Walker, Trans. Ent. Soc. London (3), II., 1864, p. 207, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 387.

Brazil: Amazon (Bates).

CHALCIS FERRUGINEA Fabricius.

Chalcis ferruginea Fabricius, Syst. Piez., 1804, p. 165.—Dalla Torre, Cat. Hym., V., 1898, p. 387.

Brazil.

CHALCIS FERVIDA Walker.

Chalcis fervida Walker, Ann. & Mag. Nat. Hist. (2), IX., 1852, p. 42, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 387.

Brazil: Para.

CHALCIS IMPLEXA Walker.

Chalcis implexa Walker, Trans. Ent. Soc. London (3), I., 1862, p. 352, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 388.

Brazil: Ega (Bates); Santarem; Corumba (many specimens).

CHALCIS MINUTA (Linné).

Vespa sp. Geoffroy, Hist. abr. Insect., II., 1762, p. 380.

Vespa minuta Linné, Syst. nat., Ed. 12^{a}, I., 1867, p. 952.—Ph. L. Muller, Linnéa Vollst. Natursyst., V., 2, 1775, p. 887.—Villers, C. Linnæi Entom., III., 1789: p. 272.—Christ, Naturg. d. Insect., 1791, p. 246

Vespa femoralis Fourcroy, Entom. Paris, II., 1785, p. 437.

? Sphex femoralis Christ, Naturg. d. Insect., 1791, p. 291.

Chalcis femorata Dalman, Svensk. Vet.-Akad. Handl., XLI., 1820, p. 143, ♂ [excl. ♀].—Nees, Hym. Ichn. affin. Monogr., II., 1834, pp. 28 and 413 [excl. synon.].—Thomson, Hym. Skand., IV., 1875, p. 18, ♀♂.

Ichneumon minutus Coquebert, Illustr. iconogr. Insect., I., 1799, p. 19; T. 4, f. 7.

Brodymeria minuta Westwood, Phil. Mag. (3), I., 1832, p. 127.—Blanchard, Hist, nat. Ins., III., 1840, p. 255.—Westwood, Intro. mod. Class. Ins. Synop., p. 66.

Chalcis minuta Fabricius, Mant. Insect., I., 1787, p. 273.—Gmelin, Linné, Syst. nat., Ed. 13ª, 1790, p. 2742.—Olivier, Encycl. méthod. Ins., V., 1790, p. 439.—Rossi, Fauna Etrusca, II., 1790, p. 58, .♀—Fabricius, Ent. Syst., II., 1793, p. 195.—Panzer, Faun. Insect. German., III., 1796, p. 19; T. 4, f. 7.—Walckenaer, Faun. Paris, II., 1802, p. 77.—Schrökenstein, Verz. d. Halbkäfer, etc., 1802, p. 30.—Fabricius, Syst. Piez., 1804, p. 165.—Latreille, Hist. nat. Crust. et Ins., XIII., 1805, p. 220.—Panzer, Krit-Revis., II., 1806, p. 98.—Illiger, Rossi: Fauna Etrusca, Ed. 2ª, II., 1807, p. 87.—Jurine, Nouv. méth. class. Hym., 1807, p. 315, ♀.—Latreille, Gen. Crust. & Ins., IV., 1809, p. 26.—Spinola, Ann. Mus. hist. nat., XVII., 1811, p. 147.—Lamarck, Hist. nat. anim. s. vert., IV., 1817, p. 153.—Fouscolombe, Ann. Sc. Nat., XXVI., 1832, p. 277.—Audouin, Hist. nat. Insect. Mus., 1842, p. 183, ♂; T. 18, fig. 5.—Blanchard, Cuvier: Régne anim., Ed. 3ª, Insect., II., 1849; T. 113, f. 5.—Spinola, Gay; Hist. fis. de Chile, Zool., VI., 1851, p. 468, ♀♂.—Duméril, Mém. acad. sc. Paris, XXXI., 1860, p. 959.—Disconzi, Entom. Vicent., 1865, p. 134; T. 9, f. 154.—Ed. André, Ann. Soc. ent. France (6), I., 1881; T. 9, f. 5.—S. Saunders, Trans. Ent. Soc. London, 1881, Proc., p. xxiv.—Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 65; Pl. 4, f. 45 and 46.—Dalla Torre, Cat. Hym., V., 1898, p. 390.

Europe; North and South America.

CHALCIS MNESTOR Walker.

Chalcis mnestor Walker, The Entom., I., 1841, p. 219.—Dalla Torre, Cat. Hym., V., 1898, p. 390.

Brazil.

CHALCIS ORSEIS Walker.

Chalcis orseis Walker, The Entom., I., 1842, p. 338, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 390.

Brazil (Mr. Shuckard's collection).

CHALCIS PRODUCTA Olivier.

Chalcis producta Olivier, Encycl. Méthod. Ins., V., 1790, p. 438.—Dalla Torre Cat. Hym., V., 1898, p. 391.

Brazil: Cayenne.

? CHALCIS QUADRIPUNCTATA Fabricius.

Chalcis quadripunctata Fabricius, Syst. Piez., 1804, p. 165.—Dalla Torre, Cat. Hym., V., 1898, p. 392.

Brazil.

? CHALCIS SERRIPES Fabricius.

Chalcis serripes Fabricius, Syst. Piez., 1804, p. 164.—Dalla Torre, Cat. Hym., V., 1898, p. 392.

Brazil (Mr. Shuckard's collection).

? CHALCIS SUBFASCIATA Holmgren.

Chalcis subfasciata Holmgren, Eugenies Resa, Ins., 1868, p. 436, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 393.

Argentina: Buenos Ayres.

CHALCIS TESTACEA Blanchard.

Chalcis testacea Blanchard, Hist. nat. Ins., III., 1840, p. 254.—Dalla Torre, Cat. Hym., V., 1898, p. 393.

Brazil: Cayenne.

CHALCIS VICARIA Walker.

Chalcis vicaria Walker, Journ. Ent., I., 1861, p. 183, —.—Dalla Torre, Cat. Hym., V., 1898, p. 393.

Brazil: Ega (Bates).

CHALCIS VILLOSA Olivier.

Chalcis villosa Olivier, Encycl. Méthod. Ins., V., 1790, p. 438.—Dalla Torre, Cat. Hym., V., 1898, p. 393.

St. Trinité.

TRIBE II. *Smicrini.*

Genus SMICRA Spinola.

Under this genus Dr. von Dalla Torre, in his Catalogus Hymenopterorum, has recorded about 200 species, described by Fabricius, Spinola, Walker and others, but of this number scarcely a dozen belong to *Smicra* Spinola, as restricted by Thomson and accepted by Howard and the writer; the vast majority belong to *Spilochalcis* Thomson, but many others fall into other genera characterized in this work.

SMICRA CLAVATA (Fabricius.)

Chalcis clavata Fabricius, Syst. Piez., 1804, p. 162.—Dalla Torre, Cat. Hym., V., 1898, p. 387.

Brazil.

Genus EPITRANUS Walker.

EPITRANUS FULVESCENS Walker.

Epitranus fulvescens Walker, Ent. Mag., II., 1834, p. 26.—Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 55; pl. 3, f. 6 and 7.—Dalla Torre, Cat. Hym., V., 1898, p. 383.

West Indies: St. Vincent; South America: Brazil.

EUSTYPIURA Ashmead, gen. nov.

Allied to *Spilochalcis*, but easily separated by the abdominal differences, the eighth segment being greatly lengthened into a compressed stylus, as in *Stypiura* Kirby.

EUSTYPIURA BICOLOR, sp. nov.

(Plate XXXI., Fig. 4.)

Female.—Length 9.5–10 mm. Pale honey-yellow; eyes green; the pedicel and the first three or four basal joints of the flagellum, the middle and hind coxæ, tips of their tibiæ, middle tarsi, hind trochanters, basal half of hind femora, and the abdomen, except the stylus and sometimes the seventh segment, black, Wings hyaline, tinged with yellowish toward base, the veins light brownish. The hind femora are armed with one moderately large tooth, followed by about fourteen minute teeth.

Male.—Length 7 mm. Agrees well with the female, except that there is a dusky median streak on the mesonotum posteriorly and the abdomen is ovate, without a stylus.

Brazil: Santarem, in April; Chapada, in March and April. Described from five females and two males.

EUSTYPIURA SEXMACULATA, sp. nov.

(Plate XXXI., Fig. 6.)

Female.—Length 9–10 mm. General color pale honey-yellow; pedicel and four or five basal joints of the flagellum, the occiput, a spot on the anterior face of the pronotum, the middle lobe of the mesonotum, except along the parapsidal furrows, the inner margins of the lateral lobes, the axillæ and base of scutellum, the apex of scutellum, tips of hind femora, a spot at apex of hind femora *beneath*, and the base and apex of hind tibiæ, black; the abdomen has some faint transverse brownish bands. Wings hyaline. The hind femora are armed with one moderate-sized tooth at base, followed by sixteen or seventeen minute teeth.

Brazil: Santarem; Maruru; Para. Three specimens. The specimen from Maruru has the basal half of the hind femora black; while that from Para has a spot at base and the apex of the stylus black.

EUSTYPIURA SMITHII, sp. nov.

Female.—Length 12 mm. Pale honey-yellow; the pedicel and the flagellum are brown-black, paler beneath at apex; two triangular black spots on the middle mesothoracic lobe anteriorly, and two faint streaks behind these; the lateral lobes have a black spot on the inner margins; the scutellum has a narrow transverse band at base and its tip black; while the hind femora have a black spot at apex beneath. Wings hyaline, the veins yellowish. The abdomen has the segments two to seven faintly brownish at apex. The hind femora are armed with one large long tooth at base followed by about nine or ten small teeth, the small teeth tipped with black.

Brazil: Santarem. One specimen.

Genus SPILOCHALCIS Thomson.

SPILOCHALCIS ABDOMINALIS (Walker).

Smicra abdominalis Walker, Journ. of Ent., I., 1861, p. 177, ♂.
Smicra ambigua Cresson, Trans. Am. Ent. Soc., IV., 1872, p. 44, ♂.
Smicra abdominalis Cresson, Trans. Am. Ent. Soc., IV., 1872, p. 57, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 372.

Mexico: Orizaba (Sallé); South America: Brazil.

SPILOCHALCIS ACCILA (Walker).

Smiera accila Walker, the Entom., I., 1841, p. 218.—Dalla Torre, Cat. Hym., V., 1898, p. 373.

Brazil (Mr. Shuckard's collection).

SPILOCHALCIS ACUTA (Fabricius).

Chalcis acuta Fabricius, Syst. Piez., 1804, p. 161.—Dalla Torre, Cat. Hym., V., 1898, p. 385.

Brazil.

SPILOCHALCIS ADJUNCTA (Walker).

Smicra adjuncta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 189, ♂.
Smicra adjuncta Dalla Torre, Cat. Hym., V., 1898, p. 373.

Brazil (Mr. Bates).

SPILOCHALCIS ADMIXTA (Walker).

Smicra admixta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 189, ♀.
Smicra adjuncta Dalla Torre, Cat. Hym., V., 1898, p. 373.

Brazil (Mr. Bates).

Genus SPILOCHALCIS Thomson.

SPILOCHALCIS ÆMULA (Walker).

Smiera æmula Walker, Trans. Ent. Soc. London (3), II., 1864, p. 192, ♀.
Smicra æmula Dalla Torre, Cat. Hym., V., 1898, p. 373.
Brazil (Mr. Bates).

SPILOCHALCIS ÆQUALIS (Walker).

Smiera æqualis Walker, Trans. Ent. Soc. London (3), II., 1864, p. 200, ♂.
Smicra æqualis Dalla Torre, Cat. Hym., V., 1898, p. 373.
Brazil (Mr. Bates).

SPILOCHALCIS AFFICTA (Walker).

Smiera afficta Walker, Trans. Ent. Soc. London (3), II., p. 184, ♂.
Smiera afficta Dalla Torre, Cat. Hym., V., 1898, p. 373.
Brazil (Mr. Bates).

SPILOCHALCIS ALIENATA (Walker).

Smiera alienata Walker, Trans. Ent. Soc. London (3), II., 1864, p. 195, ♀.
Smiera alienata Dalla Torre, Cat. Hym., V., 1898, p. 393.
Brazil (Mr. Bates).

SPILOCHALCIS ANNEXA (Walker).

Smiera annexa Walker, Trans. Ent. Soc. London (3), II., 1864, p. 204, ♀.
Smicra annexa Dalla Torre, Cat. Hym., V., 1898, p. 373.
Brazil (Mr. Bates).

SPILOCHALCIS ANNULIFERA (Walker).

Smiera annulifera Walker, Trans. Ent. Soc. London (3), II., 1864, p. 202, ♀.
Smicra annulifera Dalla Torre, Cat. Hym., V., 1898, p. 373.
Brazil (Mr. Bates).

SPILOCHALCIS APPARATA (Walker).

Smiera apparata Walker, Trans. Ent. Soc. London (3), II., 1864, p. 186, ♀.
Smicra apparata Dalla Torre, Cat. Hym., V., 1898, p. 373.
Brazil (Mr. Bates).

SPILOCHALCIS APPRESSA (Walker).

Smiera appressa Walker, Trans. Ent. Soc. London (3), II., 1864, p. 186, ♀.
Smicra appressa Walker, Dalla Torre, Cat. Hym., V., 1898, p. 373.
Brazil (Mr. Bates).

SPILOCHALCIS ATTACTA (Walker).

Smiera attacta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 206, ♀.
Smicra attacta Dalla Torre, Cat. Hym., V., 1898, p. 373.
Brazil (Mr. Bates).

SPILOCHALCIS BERGII (Kirby).

Smicra (?) *bergii* Kirby, Ann. & Nat. Hist. (5), XV., 1885, p. 244, ♀ ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 373.

Uruguay.

SPILOCHALCIS BLANDA (Walker).

Smiera blanda Walker, Trans. Ent. Soc. London (3), II., 1864, p. 199, ♀ ♂.

Smicra blanda Dalla Torre, Cat. Hym., V., 1898, p. 374.

Brazil (Mr. Bates).

SPILOCHALCIS BURMEISTERI (KIRBY).

Smicra burmeisteri Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 73.—Kirby, Ann. & Mag. Nat. Hist. (5), XV., 1885, p. 243.—Dalla Torre, Cat. Hym., V., 1898, p. 243.

Brazil: St. Paulo; Argentine.

SPILOCHALCIS CAPITULATA (Costa).

Smiera capitulata Costa, Ann. Mus. Zool. Napoli, II. (1862), 1864, p. 68, ♂.

Smicra capitulata Dalla Torre, Cat. Hym., V., 1898, p. 374.

Brazil.

SPILOCHALCIS CELSA (Walker).

Smiera celsa Walker, Trans. Ent. Soc. London (3), II., 1864, p. 201, ♂.

Smicra celsa Dalla Torre, Cat. Hym., V., 1898, p. 374.

Brazil (Mr. Bates).

SPILOCHALCIS COGNATA (Walker).

Smiera cognata Walker, Trans. Ent. Soc. London (3), II., 1864, p. 204, ♀.

Smicra cognata Dalla Torre, Cat. Hym., V., 1898, p. 374.

Brazil (Mr. Bates).

SPILOCHALCIS COMPOSITA (Walker).

Smiera composita Walker, Trans. Ent. Soc. London (3), II., 1864, p. 188, ♀.

Smicra composita Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil (Mr. Bates).

SPILOCHALCIS CONGRUA (Walker).

Smiera congrua Walker, Journ. Ent., I., 1861, p. 176, ♀.

Smicra congrua Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil: Santarem (Bates).

SPILOCHALCIS CONTRACTA (Walker).

Smiera contracta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 184, ♀.

Smicra contracta Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil (Mr. Bates).

SPILOCHALCIS CONTRIBUTA (Walker).

Smiera contributa Walker, Trans. Ent. Soc. London (3), II., 1864, p. 201, ♂

Smicra contributa Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil (Mr. Bates).

SPILOCHALCIS COSTALIS (Walker).

Smiera costalis Walker, Journ. Ent., I., 1861, p. 174, ♀.

Smicra costalis Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil: Para.

SPILOCHALCIS DARES (Walker).

Smiera dares Walker, The Entom., I., 1842, p. 338, ♀.

Smicra dares Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil (Mr. Shuckard's collection).

(?) SPILOCHALCIS DECIPIENS (Kirby).

Smicra decipiens Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 73.—Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil: Villa Nova, Amazon.

SPILOCHALCIS DECISA (Walker).

Smiera decisa Walker, Journ. Ent., I., 1861, p. 176, ♂.

Smicra decisa Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil: St. Paulo.

SPILOCHALCIS DEDUCTA (Walker).

Smiera deducta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 206, ♀.

Smicra deducta Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil (Mr. Bates).

SPILOCHALCIS DEFUNCTA (Walker).

Smiera defuncta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 189, ♀.

Smicra defuncta Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil (Mr. Bates).

SPILOCHALCIS DEMONSTRATA (Walker).

Smiera demonstrata Walker, Journ. Ent., I., 1861, p. 175, ♀.

Smicra demonstrata Dalla Torre, Cat. Hym., V., 1898, p. 376.

Brazil: Villa Nova (Bates).

SPILOCHALCIS DEMOTA (Walker).

Smiera demota Walker, Trans. Ent. Soc. London (3), II., 1864, p. 205, ♀.

Smicra demota Dalla Torre, Cat. Hym., V., 1898, p. 376.

Brazil (Mr. Bates).

Spilochalcis depicta (Walker).

Smiera depicta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 203, ♀.
Smicra depicta Dalla Torre, Cat. Hym., V., 1898, p. 376.
Brazil (Mr. Bates).

Spilochalcis descripta (Walker).

Smiera descripta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 197, ♀.
Smicra descripta Dalla Torre, Cat. Hym., V., 1898, p. 376.
Brazil (Mr. Bates).

Spilochalcis detracta (Walker).

Smiera detracta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 202, ♂.
Smicra detracta Dalla Torre, Cat. Hym., V., 1898, p. 376.
Brazil (Mr. Bates).

Spilochalcis dimota (Walker).

Smiera dimota Walker, Trans. Ent. Soc. London (3), II., 1864, p. 196, ♀.
Smicra dimota Dalla Torre, Cat. Hym., V., 1898, p. 376.
Brazil (Mr. Bates).

Spilochalcis discalis (Walker).

Smiera discalis Walker, Journ. Ent., I., 1861, p. 178, ♀.
Smicra discalis Dalla Torre, Cat. Hym., V., 1898, p. 376.
Brazil: Ega (Mr. Bates).

Spilochalcis discolor (Walker).

Smiera discolor Walker, Journ. Ent., I., 1861, p. 180, ♀.
Smicra discolor Dalla Torre, Cat. Hym., V., 1898, p. 376.
Brazil: St. Paulo (Mr. Bates).

Spilochalcis disposita (Walker).

Smiera disposita Walker, Trans. Ent. Soc. London (3), II., 1864, p. 196, ♀.
Smicra disposita Dalla Torre, Cat. Hym., V., 1898, p. 376.
Brazil (Mr. Bates).

Spilochalcis enyo (Walker).

Smiera enyo Walker, The Entom., I., 1841, p. 133, ♀♂.
Smicra enyo Dalla Torre, Cat. Hym., V., 1898, p. 376.
Brazil (Mr. Curtis' collection).

Spilochalcis exhauriens (Walker).

Smiera exhauriens Walker, Trans. Ent. Soc. London (3), II., 1898, p. 198, ♀.
Smicra exhauriens Dalla Torre, Cat. Hym., V., 1898, p. 376.
Brazil (Mr. Bates).

SPILOCHALCIS EXPLETA (Walker).

Smicra expleta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 197, ♀.
Smicra expleta Dalla Torre, Cat. Hym., V., 1898, p. 376.
Brazil (Mr. Bates).

SPILOCHALCIS FLAVA (Fabricius).

Chalcis flava Fabricius, Syst. Piez., 1804, p. 261.—Dalla Torre, Cat. Hym., V., 1898, p. 388.
South America: Brazil.

SPILOCHALCIS ANDRÉI Ashmead, n. n.

Smicra flavescens André, Ann. Soc. Ent. France (6), I., 1881, p. 343.—Dalla Torre, Cat. Hym., V., 1898, p. 377.
Guiana.

SPILOCHALCIS FOVEATA (Kirby).

Smicra foveata Kirby, Journ. Linn. Soc. Zool., XVII., 1883, p. 71, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 377.
Brazil: Amazon.

SPILOCHALCIS GHILIANII (Spinola).

Smicra ghilianii Spinola, Mem. accad. sc. Torino (2), XIII., 1851, p. 46, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 377.
Brazil.

SPILOCHALCIS GRACILIS (Kirby).

Smicra gracilis Kirby, Ann. & Mag. Nat. Hist. (6), IV., 1889, p. 143.—Dalla Torre, Cat. Hym., V., 1898, p. 377.
Brazil: Theresopolis.

SPILOCHALCIS ILLATA (Walker).

Smicra illata Walker, Trans. Ent. Soc. London (3), I., 1862, p. 348, ♂.
Smicra illata Dalla Torre, Cat. Hym., V., 1898, p. 377.
Brazil: Ega.

SPILOCHALCIS INCERTA (Kirby).

Smicra incerta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 183, ♀ nec ♂.
Smicra incerta Kirby, Journ. Linn. Soc. Zool., XVII., 1883, p. 72.—Dalla Torre, Cat. Hym., V., 1898, p. 377.
Brazil: Amazon.

SPILOCHALCIS LANCEOLATA (Walker).

Smicra lanceolata Walker, Journ. Ent., I., 1861, p. 174, ♀.
Smicra lanceolata Dalla Torre, Cat. Hym., V., 1898, p. 378.
Brazil: Santarem (Mr. Bates).

SPILOCHALCIS LEPREURII (Spinola).

Smicra lepreurii Spinola, Ann. Soc. Ent. France, IX., 1840, p. 98, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 378.

Brazil: Cayenne.

SPILOCHALCIS LOBATA (Costa).

Smiera lobata Costa, Ann. mus. zool. Napoli, II. (1862), 1864, p. 68.

Smicra lobata Dalla Torre, Cat. Hym., V., 1898, p. 378.

? Brazil.

? SPILOCHALCIS LUTEIPENNIS (Walker).

Smiera luteipennis Walker, Journ. Ent., I., 1861, p. 172, ♀ ♂.

Smicra luteipennis Dalla Torre, Cat. Hym., V., 1898, p. 378.

Brazil.

SPILOCHALCIS MULTINOTATA (Costa).

Smiera multinotata Costa, Ann. mus. zool. Napoli, II. (1862), 1864, p. 68, ♀.

Smicra multinotata Dalla Torre, Cat. Hym., V., 1898, p. 379.

? Brazil.

SPILOCHALCIS NEBULOSA (Walker).

Smiera nebulosa Walker, Journ. Ent., I., 1861, p. 180, ♀.

Smicra nebulosa Dalla Torre, Cat. Hym., V., 1898, p. 380.

Brazil: Ega (Mr. Bates).

? SPILOCHALCIS NIGRICORNIS (Fabricius).

Chalcis nigricornis Fabricius, Ent. Syst. Suppl., 1798, p. 243.—Fabricius, Syst. Piez., 1804, p. 163.—Jurine, Nouv. Méth. Class. Hym., 1807, p. 316, ♀ ♂.

Smicra nigricornis Cresson, Trans. Am. Ent. Soc., IV., 1872, p. 57.—Dalla Torre, Cat. Hym., V., 1898, p. 380.

Brazil.

SPILOCHALCIS OBLITERANS (Walker).

Smiera obliterans Walker, Journ. Ent. I., 1861, p. 175, ♀ ♂.

Smicra obliterans Dalla Torre, Cat. Hym., V., 1898, p. 380.

Brazil: Santarem.

SPILOCHALCIS PEIROLERII (Spinola).

Smiera peirolerii Spinola, Ann. Mus. Hist. Nat., XVII., 1811, p. 147 (s. descrip.).

Smicra peirolerii Dalla Torre, Cat. Hym., V., 1898, p. 386.

Brazil.

SPILOCHALCIS PERA (Kirby).

Smicra pera Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 72.—Dalla Torre, Cat. Hym., V., 1898, p. 381.

Brazil.

SPILOCHALCIS PICTA (André).

Smicra picta André, Ann. Soc. ent. France (6), I., 1881, p. 341, ♀.—Dalla Torre, Cat. Hym , V., 1898, p. 381.

? Brazil.

SPILOCHALCIS PIELUS (Walker).

Smiera pielus Walker, Ent. Mag., V., 1838, p. 470, ♀.

Smicra pielus Dalla Torre, Cat. Hym., V., 1898, p. 381.

Brazil: Rio de Janeiro.

SPILOCHALCIS PYGMÆA (Fabricius).

Chalcis pygmæa Fabricius, Syst. Piez., 1804, p. 162.—Blanchard, Hist. Nat. Ins., III., 1840, p. 254.—Dalla Torre, Cat. Hym., V., 1898, p. 392.

Brazil.

SPILOCHALCIS QUINQUESIGNATA (Costa).

Smiera quinquesignata Costa, Ann. mus. zool. Napoli, II. (1862), 1864, p. 68, ♀.

Smicra quinquesignata Dalla Torre, Cat. Hym., V., 1898, p. 381.

? Brazil.

SIPLOCHACIS REFERATOR (Walker).

Smiera referator Walker, Trans. Ent. Soc. London (3), I., 1862, p. 347, ♀.

Smicra referator Dalla Torre, Cat. Hym., V., 1898, p. 381.

Brazil: Ega (Mr. Bates).

SPILOCHALCIS SORDIDA (Walker).

Smiera sordida Walker, Journ. Ent., I., 1861, p. 177, ♀.

Smicra sordida Dalla Torre, Cat. Hym., V., 1898, p. 382.

Brazil: Villa Nova (Mr. Bates).

SPILOCHALCIS TERMINALIS (Walker).

Smiera terminalis Walker, Trans. Ent. Soc. London (3), II., 1864, p. 200, ♀.

Smicra terminalis Dalla Torre, Cat. Hym., V., 1898, p. 383.

Brazil (Mr. Bates).

SPILOCHALCIS TORRIDA (Walker).

Smicra torrida Walker, Ann. & Mag. Nat. Hist. (2), X., 1852, p. 46, ♀.

Smicra torrida Dalla Torre, Cat. Hym., V., 1898, p. 383.

Brazil: Para.

SPILOCHALCIS VACILLANS (Walker).

Smiera vacillans Walker, Trans. Ent. Soc. London (3), II., 1864, p. 199, ♀.

Smicra vacillans Dalla Torre, Cat. Hym., V., 1898, p. 383.

Brazil.

SPILOCHALCIS VARIEGATA (Fabricius).

Chalcis variegata Fabricius, Syst. Piez., 1804, p. 160.—Dalla Torre, Cat. Hym., V., 1898, p. 393.

Brazil (Mr. Bates).

TABLE OF NEW SPECIES.

1. Thorax yellow or mostly yellow.................... 15

Thorax black or mostly black, or *red*.

Mesonotum entirely black.................... 2

Mesonotum not entirely black.................... 5

2. Dorsum of pronotum entirely yellow.................... 3

Dorsum of pronotum not entirely yellow.

Hind margin of pronotum with a yellow line on each side; clypeus except anteriorly, the front and hind orbits, all tarsi, and a line on each side of the scutellum, yellow; abdomen black with only the petiole yellow, ♀.................... *S. tarsalis.*

Hind margin of pronotum entirely yellow; head entirely black; lateral mesothoracic lobes with a yellow spot in front of the tegulæ; scutellum with a yellow line across the base; abdomen entirely black, ♀.................... *S. atrata.*

3. Middle mesothoracic lobe entirely black.................... 4

Middle mesothoracic lobe not entirely black, either margined with yellow or with minute yellow or reddish dots or spots, sometimes red or red in part.................... 5

4. Front orbits, a spot on hind orbits below, the scape, the apical half of scutellum, except the apical ridge, the legs, except a large spot on hind femora *above* at apex and their tarsi, yellow; lateral mesothoracic lobes and the axillæ black; abdomen with the basal half or more ferruginous, ♀.... *S. santaremensis.*

5. Thorax above *not* red.................... 11

Thorax above red or red for the greater part.

Hind coxæ black.................... 6

Hind coxæ ferruginous or yellow, but sometimes with a black spot or line.................... 7

6. Head red; thorax except pleura and metathorax which are black, red; scape, front and middle legs and the long petiole of abdomen, yellow; body of abdomen rufous; hind femora and tibiæ ferruginous, ♀.................... *S. rufodorsalis.*

7. Head normal, seen from in front *not* wider than long.................... 8

Head abnormal, seen from in front much wider than long.

Thorax, except the sutures, red, the pronotum with a yellowish tinge; scape, front and middle legs, yellow, the middle femora toward apex and the tibiæ toward base brownish, the hind femora dusky at middle; abdomen red, ♀.................... *S. laticeps.*

8. Thorax *not* mostly red.................... 9

Thorax mostly red.................... 10

9. Thorax, except the middle mesothoracic lobe posteriorly and the metathorax which are black, red; base of antennæ and the legs yellow; abdomen yellowish, the petiole black, ♀.... *S. nigropetiolata.*

Thorax, except the middle mesothoracic lobe posteriorly, the lateral lobes and the scutellum which are red, black; head black; front and middle legs yellow; hind femora black; hind tibiæ and tarsi and the long abdominal petiole, yellow, ♀.................... *S. rufoscutellaris.*

10. Thorax, except the middle mesothoracic lobe posteriorly and the metathorax which are black, red; legs yellow; abdomen pale ferruginous, the petiole black.................... *S. nigropetiolata.*

Thorax above wholly red, the pleura and metathorax black; head black; scape, front and middle legs and the abdomen at base pale yellowish; hind legs, except tarsi, pale ferruginous, ♀.
S. flavobasalis.

11. Thorax above mostly black, *without* small yellow or reddish dots, the lobes margined with yellow.. 12

Thorax above mostly black, but the dorsum with many small yellow or reddish dots.

Legs mostly black, the knees of front and middle legs, the base and apex of tibiæ, and all tarsi, yellow; abdomen black with two transverse white lines at apex of the second dorsal segment, ♀.. *S. janeiroensis.*

12. Hind coxæ mostly black *or black with yellow stripes*.. 13

Hind coxæ *not* mostly black; mesothoracic lobes margined with yellow........................ 15

13. Hind coxæ *with* a yellow spot at base *above* or striped black and yellow..................... 14

Hind coxæ *without* a yellow spot at base. Head, except the front orbits, black; thorax black with a line on each side of the middle mesothoracic lobe and two large spots on the scutellum, yellow; hind femora with a spot at apex, the front and middle legs except the coxæ, the hind tarsi and the petiole of the abdomen, yellow, ♂.. *S. santaremensis.*

14. Vertex with no irregular yellow marks, otherwise similar to *S. flavopetiolata*, except that the scutellum has two oblong yellow spots, one on each side, the metanotum and the mesopleura being immaculate.. 15

Vertex with irregular yellow marks, or the ocelli margined with yellow; front orbits, clypeus, a line on each side of the middle mesothoracic lobe, a spot on the lateral lobes, two oblong spots *at base* of scutellum nearly confluent, two spots on metanotum, a spot on mesopleura beneath the tegulæ and a small spot in front of it, and the legs, except the coxæ, the base of front and middle femora beneath, and most of hind legs which are black, yellow; the hind coxæ have a yellow spot at base above connected with a long yellow stripe beneath; hind femora margined with yellow at base and above, and also with a yellow spot outwardly near the apex; hind tibiæ with a yellow line outwardly extending from near the base to the apex.................................. *S. flavoorbitalis.*

15. Front wings maculate, or *with* a fuscous spot or cloud from the tip of the stigmal vein.......... 16

Front wings immaculate, or *without* a fuscous spot or cloud from the tip of the stigmal vein....... 21

16. Head *not* entirely yellow, the occiput and the scrobes or the middle of the face black.............. 17

Head entirely yellow.. 20

17. Scutellum mostly yellow with a central black spot; if black margined with yellow, the axillæ never wholly black, the ridge or plate at apex entire.. 18

Scutellum mostly black with two large yellow spots nearly confluent at apex, the axillæ wholly black, the ridge at apex emarginate; front and middle legs yellow, ♂.................... *S. persimilis.*

18. All legs entirely yellow, except a spot, sometimes faint or nearly obsolete, on hind coxæ *above*.... 19

Front and middle legs entirely yellow, the hind legs marked with black, the coxæ more or less black above, ♀.. *S. unimaculata.*

19. Abdomen fusiformly pointed and yellow, except the sheaths of the ovipositor which are black.

All mesothoracic lobes black margined with yellow; scutellum yellow with a large central black spot; mesopleural furrow black; hind coxæ with a distinct black spot, ♀........ *S. perplexa.*

Not all of the mesothoracic lobes black margined with yellow, the lateral lobes being wholly yellow; spot on hind coxæ nearly obsolete, ♀................................ *S. imitator.*

20. Thorax mostly yellow with the sutures, a median stripe or line on the middle mesothoracic lobe posteriorly and on the scutellum, black; all legs yellow; abdomen as in *S. imitator*, ♀..... *S. simillima.*

Thorax mostly yellow but with the middle mesothoracic lobe anteriorly and the tip of the metathorax dusky or black, the scutellum entirely yellow; all legs yellow but the hind coxæ *above* ferruginous or blackish at apex; abdomen ferruginous, the petiole long, blackish at base, the body oblong oval, tinged with fuscous or blackish at sides towards apex, ♂ .... *S. chapadæ.*

21. Thorax *not* entirely yellow.. 22

Thorax entirely yellow, immaculate 18

22. Middle mesothoracic lobe yellow with two small black spots or short lines on the anterior margin and a black spot posteriorly 78

Middle mesothoracic lobe quite differently marked.. 23

23. Middle mesothoracic lobe with a large triangular black spot, or black with the sides and the base (the part near the scutellum) margined with yellow or white (the black sometimes with a yellow central spot).. 24

Middle mesothoracic lobe with one or more black lines, or with a central black spot.............. 44

24. Middle mesothoracic lobe margined with yellow.. 25

Middle mesothoracic lobe margined with white.

Head, except the scrobes and the occiput, the pronotum above, the outer margins of the lateral mesothoracic lobes, two large spots on the scutellum, a line on each side of the metathorax and the front and middle legs white or yellowish-white.......................*S. albomaculata.*

25. Hind coxæ *not* mostly black, either ferruginous or yellow, but sometimes spotted or striped with black. 26

Hind coxæ nearly wholly black, or at most with a yellowish spot at base above or below; body of abdomen rufous or pale ferruginous, the petiole yellow.

Hind coxæ black except a spot at base *beneath;* mesothoracic lobes mostly red margined with yellow; pleura black, ♀ ....*S. santarema.*

Hind coxæ black except a spot at base *above;* mesothoracic lobes black margined with yellow; abdomen red...*S. erythrogaster.*

26. Hind coxæ striped longitudinally with black or yellow and black.............................. 27

Hind coxæ *not* so marked, at the most with only a black spot, but frequently immaculate, except at the extreme apex... 28

27. Lateral mesothoracic lobes along the outer and basal margins yellow; scutellum black with a yellow band across the base, the axillæ wholly yellow, except a delicate black line at base; hind femora mostly yellow with a leg of mutton shaped black spot extending from the base to near the middle, and a curved black line toward apex; abdomen black and yellow, the petiole, base of the second, third and fourth dorsal segments black, ♀.......................................*S. flavoaxillaris.*

Lateral mesothoracic lobes with an oblique yellow spot on the outer basal angle; scutellum with two spots at base and its apex yellow, the axillæ wholly black; hind femora mostly black marked with yellow at base and above and with a curved yellow line outwardly at apex; abdomen yellow and black banded, the petiole yellow...? *S. flavoorbitalis.*

28. All coxæ yellow, immaculate, except sometimes the hind coxæ at the extreme apex............... 32

All coxæ *not* yellow, immaculate, the hind coxæ maculate or at least dusky at base or at apex or with a large black spot... 29

29. Head *not* entirely yellow, the occiput and the scrobes, or the middle of the face, black............ 30

Head entirely yellow.. 31

30. Middle mesothoracic lobe margined with yellow and with a small yellow spot in the black before the middle, the lateral lobes margined with yellow outwardly; scutellum margined all around with yellow, the axillæ with a yellow spot behind; dorsum of pronotum yellow with a small black spot on

each side, meso- and metapleura marked with yellow; hind femora yellow with four black spots on the outer face and one small spot on the inner face; abdomen short ovate, the petiole about four times as long as thick, the segments 3 to 8 at sides banded with black or fuscous..... *S. marginata.*

31. Face with a long acute tubercle between the insertion of the antennæ, yellow, a large triangular black spot on middle mesothoracic lobe, the outer margins of the lateral lobes, mesopleura, and spot on metanotum black; abdomen pale ferruginous; ♀.............................. *S. tuberculata.*

32. Middle mesothoracic lobe with a large triangular black spot or black with the sides and the base (the part nearest the scutellum) yellow, the lateral lobes also margined outwardly with yellow...... 33

Middle mesothoracic lobe with one or more black lines, the lateral lobes usually immaculate.... 44

33. Scutellum yellow with a central black line or spot, the axillæ not entirely black, usually yellow with a black spot.. 34

Scutellum yellow with a large quadrate black spot at base, the axillæ black.

Scutellum at apex emarginate or bidentate; hind femora marked with black; their tibiæ biannulate with black; abdomen conic-ovate, the petiole not more than thrice as long as thick. *S. bidentata.*

34. Occiput and the vertex yellow, the scrobes always yellow.................................... 42

Occiput and the vertex black, the scrobes always black.

The triangular black spot on the middle mesothoracic lobe *without* a central yellow spot... 35

The triangular black spot on the middle mesothoracic lobe *with* a central yellow spot...... 39

35. Mesopleural furrow (the femoral furrow of the mesopleura) black 36

Mesopleural furrow *not* black.. 37

36. Hind femora outwardly with a large broad black spot near the base, a small black spot at apex and another above it on the upper margin; abdomen subglobose, the petiole about four times as long as thick.. *S. maculata*, sp. nov.

Hind femora immaculate, except a black spot within near upper margin; abdomen oblong oval, faintly tinged with piceous, the petiole three times as long as thick (♂), in female long fusiform or lanceolate, the petiole short, transverse .... *S. hempeli.*

37. Hind coxæ with a black stripe or spot above.. 38

Hind coxæ immaculate.

Hind femora with a large black spot on upper margin within; scutellum yellow with a median black line.. *S. hempeli.*

Hind femora immaculate; abdomen fusiformly pointed, some of the dorsal segments banded with fuscous, the petiole four times as long as thick; ♀; scutellum with a large black spot on the disk.. *S. devia.*

38. No new species fall in here.

39. Meso- and meta-pleura yellow, except sometimes a black spot in the femoral furrow............. 40

Meso- and meta-pleura, except a spot beneath the insertion of the wings, black.

Hind coxæ black at apex, the hind femora yellow with a large black spot across from the large basal tooth and another smaller spot at apex, the hind femora with a black annulus at base; body of abdomen short, dusky above; ♀.............................. *S. nigropleuralis.*

40. Hind femora immaculate.. 41

Hind femora with one or two black spots.

Hind femora with two black spots; abdomen short ovate, shorter than the head and thorax united, the petiole about thrice as long as thick; ♀ .... *S. bimaculata.*

Hind femora with one black spot; abdomen oval, the petiole only twice as long as thick; ♂. *S. corumbicola.*

41. Abdomen in ♀ long, fusiformly pointed, longer than the head and thorax united, the petiole very short, wider than long, in ♂ not longer than the thorax, the petiole thrice as long as thick. *S. mülleri.*

Abdomen in ♀ fusiform, but not longer than the head and thorax united, the petiole nearly thrice as thick, in ♂ oblong-oval.......... *S. howardi.*

42. Front face of pronotum immaculate.......... 43

Front face of pronotum with a median black spot.

Mesopleura entirely yellow; ♂.......... *S. mülleri.*

43. Hind coxæ with a black spot at base *beneath*; mesopleural furrow and a spot on each side of the metanotum black; abdomen fusiform, more or less reddish, the dorsal segments banded with black or fuscous, the petiole black and about thrice as long as thick.......... *S. howardi.*

44. Middle mesothoracic lobe with a small central black spot or with two black spots anteriorly.......... 80

Middle mesothoracic lobe not so marked.

Middle mesothoracic lobe *with* a central black line its entire length or nearly so.......... 45

Middle mesothoracic lobe *without* a central black line, but with two lines anteriorly, or these lines are united and form a loop, which is sometimes connected with a short median black line from the base of the scutellum.......... 64

45. Parapsidal furrows or sutures *not* black.......... 54

Parapsidal furrows or sutures black.

Hind coxæ immaculate or with only a black spot above, or the extreme apex black, never striped longitudinally with black.......... 47

Hind coxæ striped longitudinally with black.......... 46

46. Hind coxæ with a black stripe both above and beneath: metathorax with a central black spot; abdomen subglobose, banded with black or fuscous above, the petiole a little more than twice longer than thick.......... *S. insularis.*

Hind coxæ with a black stripe above only; metathorax dusky medially; abdomen conically produced, the dorsum banded with black, the petiole not quite twice as long as thick.......... *S. trinidadensis.*

47. Hind coxæ immaculate except sometimes at apex.......... 48

Hind coxæ with a large black spot above.

Hind femora with two black spots, one near the middle and one at the apex; mesopleural furrow black; body of abdomen subglobose; faintly banded, the petiole about thrice as long as thick.......... *S. incongrua.*

Hind femora immaculate; a small spot on each lateral mesothoracic lobe; abdomen elongate lanceolate, much longer than the head and thorax united, the petiole very short, transverse. *S. mayri.*

48. Mesopleura marked with black; middle mesothoracic lobe with a central black line.......... 49

Mesopleura immaculate.......... 53

49. Hind femora maculate.......... 50

Hind femora immaculate.......... 52

50. The central black line on the middle mesothoracic lobe not or only slightly dilated at the middle... 51

The central black line on the middle mesothoracic lobe dilated at the middle; hind femora with a spot at base beneath and a spot at apex beneath black; abdomen conic-ovate, the petiole more than thrice longer than thick.

Hind tibiæ *without* a median black band.......... *S. timida.*

Hind tibiæ *with* a median black band.......... *S. biannulata.*

51. Hind femora with a black spot at apex beneath but not at base; abdomen conic ovate, the petiole scarcely thrice as long as thick.......... *S. media.*

Hind femora with a black spot at base and a black spot at apex; abdomen fusiformly pointed, the petiole about twice as long as thick; ♀.......... *S. cameroni.*

52. Abdomen conic-ovate, the petiole about thrice as long as thick; legs immaculate.......... *S. enochi.*

53. Abdomen fusiformly produced, longer than the head and thorax united, the petiole very short, wider than long.......... *S. fusiformis.*

54. Lateral mesothoracic lobes immaculate.......... 60

Lateral mesothoracic lobes maculate, or with a black spot or line; front face of pronotum usually with a median black spot, variable in size, sometimes very minute but rarely entirely wanting.

Scutellum *with* a central black line or spot and also with a black line across the base or in the basal suture; sometimes with a large black spot at apex.......... 55

Scutellum *without* a central black line or spot.......... 59*

55. Hind coxæ immaculate, except sometimes at apex.......... 56

Hind coxæ with a black spot above toward base.

Hind femora with a black spot at apex.......... *S. femorata* Fabr.

56. Hind tibiæ *outwardly* entirely yellow.......... 58

Hind tibiæ *outwardly* more or less fuscous or black, not entirely yellow.......... 57

57. Hind tibiæ black or fuscous with a broad yellow band before the middle; hind femora with three black spots.......... *S. urichi.*

Hind tibiæ black or fuscous at the apical third, yellow basally; hind femora with a black spot at apex beneath; axillæ black; scutellum with a large oval spot towards apex; abdomen conic-ovate, the petiole about five times as long as thick; eyes very large, occupying the whole sides of the head.
S. axillaris.

58. Hind femora *with* a black spot at apex.......... 59

Hind femora immaculate.

Scutellum *with* a central black line, the apex yellow; middle mesothoracic lobe with a transverse black line anteriorly.......... *S. trilineata.*

Scutellum *without* a central black line, the apex with a transverse black spot; middle mesothoracic lobe with two triangular black spots anteriorly.......... *S. marshalli.*

59. Middle mesothoracic lobe with a club-shaped central black spot that is connected with a black line across the anterior margin but not extending to the base of the scutellum; lateral mesothoracic lobes with a black line; scutellum with a club-shaped median black spot that is connected with a transverse line at base; a minute spot in mesopleural furrow, the apex of hind coxæ, a spot at apex of hind femora and spots or bands on dorsum of abdomen, black; ♀.......... *S. morleyi.*

59*. Some old species fall in here.

60. Middle mesothoracic lobe with a central black line; scutellum with a black line across the base and with the apex black, or with a slight median black line.

Metanotum *without* a central black line.......... 61

Metanotum *with* a central black line.

Hind femora with a black spot at apex; abdomen fusiformly pointed, the petiole about four times as long as thick; antennæ, except the apical joints, eight to thirteen, yellow.
S. apicalis.

61. Hind femora immaculate.......... 62

Hind femora maculate, a large black spot at apex and sometimes with a longitudinal black spot; hind femora armed with a large tooth, followed by eighteen small black teeth; abdomen in ♀ fusiformly pointed, the petiole at least thrice as long as thick, in ♂ long ovate, the petiole at least four times as long as thick .... *S. unilineata.*

62. Hind coxæ immaculate 63

Hind coxæ with a black stripe *beneath.*

Mesopleural furrow black; abdomen conic-ovate, more or less banded with fuscous, the petiole *not* thrice as long as thick; legs, except as noted, yellow, immaculate .... *S. lineocoxalis.*

63. Some old species fall in here.

64. The two black lines on the anterior part of the middle mesothoracic lobe unite and form a loop or a delta-shaped mark, which is sometimes connected with the base of the scutellum by a black line. 65

The two black lines on the anterior part of the middle mesothoracic lobe do not unite to form a loop or delta-shaped mark 73

65. Mesopleural spiracles surrounded by black 66

Mesopleural spiracles *not* surrounded by black 71

66 The black loop on the middle mesothoracic lobe is connected with the base of the scutellum by a central black line 67

The black loop on the middle mesothoracic lobe is not connected with the base of the scutellum by a central black line 71

67. Lateral mesothoracic lobes *not* margined with black along the inner margin, at the most with a black spot 68

Lateral mesothoracic lobes margined with black along the inner margin.

Hind femora with a black spot on disk outwardly .... *S. chapadensis.*

68. Hind coxæ immaculate, except at extreme apex; abdomen conic-ovate, fusiformly pointed or lanceolate 69

Hind coxæ with a black spot above.

Abdomen short, globose .... *S. braneensis.*

69. Hind femora immaculate, or at most with a small spot at apex, the disk never maculate 70

Hind femora with a curved black spot across the disk and a small black spot at apex.

Abdomen conic-ovate .... *S. vagabunda.*

70. Abdomen fusiformly pointed or lanceolate, the petiole at least thrice as long as thick. .... *S. magrettii.*

71. Lateral mesothoracic lobes with an abbreviated black line on the inner margin.

Hind femora immaculate or at most with a small black spot at apex 72

Hind femora with an oblong black spot on disk near the upper margin.

Hind coxæ immaculate .... *S. rau.*

72. Hind coxæ with a small black spot above; loop on the middle mesothoracic lobe more or less incomplete, the lines interrupted on each side of the line from the base of the scutellum. ... *S. incompleta*

Hind coxæ immaculate; loop on the middle mesothoracic lobe complete .... *S. persimilis.*

73. Scutellum with three triangular black spots at base and a triangular black spot at apex. .... *S. fulleri.*

74. Scutellum with three black spots at base, the apex with a black spot or with a central black line. . 75

Scutellum with a transverse black line at base or with only two black spots 76

75. Lateral mesothoracic lobe with a black spot; hind femora with a black spot at apex; abdomen fusiformly pointed, the petiole from two and one half to three times as long as thick.

Hind coxæ with a black spot at base above; petiole of abdomen yellow; pronotum with four black spots .... *S. hollandi.*

Hind coxæ immaculate, or without a black spot at base above; petiole of abdomen black; pronotum immaculate. . . . .*S. corumbæ.*

76. Scutellum with a transverse black line at base, usually in the basal suture. 77

Scutellum with *two* black spots at base, connected with a black line in the basal suture ; a small black spot at apex.

Lateral mesothoracic lobes with a black spot at apex ; abdomen fusiformly pointed, the tip alone black, the petiole only a little longer than thick ; ♀. . . . .*S. descripta* Walker.

77. Hind femora with a small black spot at apex ; scutellum with a small triangular black spot at apex ; abdomen conic-ovate, the petiole about twice as long as thick ; ♂. . . . .*S. paraguayensis.*

78. Thorax yellow, a puncture on each side of pronotum, a spot on the lateral mesothoracic lobes, two short lines on the middle lobe anteriorly and a spot posteriorly near the scutellum, a spot on the axillæ and a spot at apex of scutellum, black ; legs immaculate ; apical half of abdomen black, the petiole nearly *five* times as long as thick ; ♂. . . . .*S. dimidiata.*

79. Thorax yellow but with the middle mesothoracic lobe with one or more black spots. 80

Thorax yellow but with the middle mesothoracic lobe immaculate, the lateral lobes with a black spot. 81

80. Middle mesothoracic lobe with two black spots anteriorly ; apex of metathorax black ; legs yellow, the extreme apex of hind coxæ black, the hind femora with a small black spot at apex. . .*S. meridionalis.*

Middle mesothoracic lobe with a small central black spot, the lateral lobes with a minute black spot ; scutellum with a delicate median black line ; abdomen fusiform ; segments two to six with fuscous bands ; ♂. . . . .*S. tripunctata.*

81. Scutellum immaculate ; abdomen subglobose ; hind femora with two black spots. . . . .*S. bipunctata.*

82. Abdomen in ♀ fusiformly pointed, the sheaths of the ovipositor black, the petiole not quite twice as long as thick (in ♂ three or more times longer than thick). . . . .*S. flava* Fabricius.

SPILOCHALCIS TARSALIS, sp. nov.

Female.—Length 5.5 mm. Black, coarsely punctate ; front orbits, face below the insertion of the antennæ, hind orbits, scape beneath, the hind margin of the pronotum, except medially, a line on each side of the scutellum, the base and apex of front tibiæ, all tarsi, and the petiole of the abdomen, yellow. Abdomen subglobose, polished black, except a reddish spot at base beneath.

Brazil : Chapada, in May. One specimen.

SPILOCHALCIS ATRATA, sp. nov.

Female.—Length about 7 mm. (Head lost.) Black, coarsely punctate ; hind margin of protonum, a spot on the hind angles of the parapsides, a line across the base of the scutellum and the ridge at apex, and the front knees and tarsi, yellow, the tarsal joints more or less dusky medially.

Brazil : Santarem. One specimen in bad condition.

SPILOCHALCIS SANTAREMENSIS, sp. nov.

Female.—Length 5.5 to 6 mm. Black, coarsely punctate ; front and hind orbits, scape, pronotum above, tegulæ, apical half of scutellum, except the ridge at apex, the apical half or more of front and middle femora and their tibiæ and tarsi, a large spot on upper outer angle of hind femora and the hind tarsi, yellow. Abdomen ovate, the basal half yellowish, the apical half black; the petiole is short, hardly twice as long as thick.

Male.—Length 6 mm. Agrees well with the female, except the middle mesothoracic lobe is margined with yellow, the scutellum has two large yellow spots at the sides, the front and middle legs, except the coxæ, are yellow, while the abdominal petiole *above* is yellow and five or six times as long as thick.

Brazil: Santarem; Chapada, in August. One male and three female specimens.

SPILOCHALCIS RUFODORSALIS, sp. nov.

Female.—Length 8 mm. Mostly red and almost smooth, the mesopleura, the reticulated metathorax and the hind coxæ, except at base beneath and at apex, being black; flagellum brown-black; front and middle legs, tips of hind coxæ, the hind tarsi, and the petiole of the abdomen yellow. The abdomen is ovate, the petiole hardly five times as long as thick.

Brazil: Santarem. One specimen.

SPILOCHALCIS LATICEPS, sp. nov.

Female.—Length 8.5 mm. Mostly red and feebly punctate, the sutures of thorax dusky, the pronotum yellowish; the scape, the front and middle legs, except the thickened part of the front and middle femora and the middle tibiæ basally, and the hind tarsi, are yellow; hind legs reddish, the hind coxæ with a dusky spot above toward base. The abdomen is ovate, the petiole yellow and about thrice as long as thick. The head is abnormal, seen from in front, about twice as wide as long, the face being concave; the eyes are large, rounded and occupy nearly the whole sides of the head, the temples being flat, undeveloped.

Brazil: Santarem. One specimen.

SPILOCHALCIS NIGROPETIOLATA, sp. nov.

Female.—Length 4 mm. Mostly red and faintly rugulosely punctate, the middle mesothoracic lobe posteriorly and the petiole of the abdomen being black; the flagellum, except the first three joints beneath, is brown-black; the front and middle legs are yellowish; the hind legs are pale ferruginous; while the body of the abdomen is pale ferruginous with a black spot on the disk above.

Brazil: Santarem. One specimen.

SPILOCHALCIS RUFOSCUTELLARIS, sp. nov.

Female.—Length 8 mm. Black, faintly punctate, the middle mesothoracic lobe posteriorly, the lateral lobes and the scutellum red; scape, tegulæ, the front and middle legs and the long abdominal petiole, yellow; hind legs, except the femora, ferruginous, the femora black; body of abdomen black.

Brazil: Chapada, in November. One specimen.

SPILOCHALCIS FLAVOBASALIS, sp. nov.

Female.—Length 3 mm. Mostly red, the head, the pleura and the metanotum black; scape, front and middle legs, hind tarsi and basal half of abdomen, including the petiole, pale yellowish; hind legs, except tarsi, pale ferruginous, the femora darker than the coxæ.

Brazil: Chapada. One specimen.

SPILOCHALCIS JANEIROENSIS, sp. nov.

Female.—Length 3.5 mm. Black, punctate; a line on hind orbits, a dot at summit of eyes, a short line on the front orbits, two approximate spots on the middle of the pronotum posteriorly, the lateral margin of same and two dots before, two dots on the middle mesothoracic lobe, three dots of the lateral lobes, and the lateral margins of the scutellum, yellow or yellowish-red; knees, tips of tibiæ and beneath, and all tarsi, yellow; hind legs mostly black, the hind femora with a minute spot above and two irregular spots at apex, yellow; hind tibiæ yellow with a black ring near the middle. The abdomen polished black except two yellowish-white spots on dorsum of the third segment.

Brazil: Rio de Janeiro, in August. One specimen. This species is allied to *S. nigrita* Howard, described from St. Vincent.

SPILOCHALCIS FLAVOORBITALIS, sp. nov.

Female.—Length 7.5 mm. Black, coarsely punctate; irregular marks on vertex, the front and hind orbits, face below antennæ, dorsum of pronotum, except a black spot at sides, the margins of the middle mesothoracic lobe, a spot at the outer basal angle of the lateral lobes, the tegulæ, a spot in front and a spot beneath, two large, oblique, nearly confluent spots at base of scutellum and the ridge at apex, two spots on metathorax, the front and middle legs, except coxæ, more or less of their femora yellow; the hind legs are mostly black, the coxæ striped with yellow beneath and above, the femora margined with yellow at base and abovo, and with a curved yellow mark outwardly, starting a little beyond the middle and extending to the apex; the hind tibiæ are yellowish outwardly from basal third. The abdomen above is mostly black, banded with yellow, the petiole and the basal half of the second segment being yellow, the following dorsal segments more or less distinctly banded with yellow basally.

Brazil: Santarem. One specimen.

SPILOCHALCIS PERSIMILIS, sp. nov.

Male.—Length 6.5 mm. Black, coarsely punctate; orbits, cheeks, pronotum, except in front, spots on each side, the margins of the middle mesothoracic lobe, a line on the outer margin of the lateral lobes, two large nearly confluent spots towards apex of scutellum, metathorax, except at base above, tegulæ, a spot on mesopleura at insertion of the hind wings, front and middle legs, except coxæ, the petiole of abdomen and the basal half of the second abdominal segment, yellow. The hind legs are broken off and cannot be described. Wings hyaline, with a fuscous spot or cloud enclosing the apex of the stigmal vein; veins dark brown.

Brazil: Chapada. One specimen.

SPILOCHALCIS UNIMACULATA, sp. nov.

Female.—Length 4.5 mm. Black and yellow, punctate. Head yellow, the occiput, a large spot on the forehead and the scrobes black; thorax black, the pronotum above, the margins of the middle mesothoracic lobe, the outer margins of the lateral lobes, the scutellum except a central black spot, the axillæ except a spot at base, the tegulæ, a spot beneath, spots on pleura above, and a transverse spot on each side of the metathorax nearly confluent, yellow; legs yellow, the hind coxæ with a black spot at base beneath and a black or fuscous streak or spot above; the hind femora on outer face are mostly yellow but with a black spot above towards apex, a black streak *beneath* and a black spot beyond it at apex; the inner face is mostly black with a large yellow spot towards apex. Wings hyaline, with a fuscous spot at apex of the stigmal vein.

Brazil: Chapada, in April. Two specimens.

SPILOCHALCIS PERPLEXA, sp. nov.

Female.—Length 5 mm. Head yellow, the occiput, vertex and scrobes black; thorax black marked with yellow, the pronotum yellow, the front face and a small area on each side of dorsum black; middle mesothoracic lobe marginal with yellow, the lateral lobes margined with yellow outwardly at base and along the inner margin at base; scutellum yellow, with a black central spot, the axillæ with a small black spot at base; pleura mostly yellow with two black spots, the metathorax yellow except a black spot at base; legs yellow, the hind coxæ with a black spot above toward base, the femoral teeth small, black, the hind tibiæ with a black line *beneath;* abdomen conically pointed, a little longer than the head and thorax united, the petiole yellow, a little more than thrice as long as thick, the body of abdomen reddish-yellow, the sheaths of the ovipositor black, the first segment with a yellowish spot at each side near base, the second and following segments marked with yellow at the sides and along the venter. Wings hyaline, with a fuscous spot or cloud from the apex of the stigmal vein; veins brownish.

Brazil: Chapada, in April. One specimen.

SPILOCHALCIS IMITATOR, sp. nov.

Female.—Length 5 mm. Stature and form of *S. perplexa*, but differing in color of thorax, hind legs and abdomen. The parapsidal sutures are black, the middle mesothoracic lobe has a black line down the center, the lateral lobes are reddish, broadly margined with yellow, the scutellum is yellow, with a large central black spot, the hind coxæ have only a faint trace of the black spot above, while the body of the abdomen except the sheaths of the ovipositor, is entirely pale ferruginous, without the yellow marks; otherwise it is scarcely distinguishable from *S. perplexa.*

Brazil: Chapada, in August. One specimen.

SPILOCHALCIS SIMILLIMA, sp. nov.

Female.—Length 5 mm. Stature and form as in the two previous species but differing in color. Yellow, the occiput, the parapsidal furrows, the pronotal suture, a short median line on the middle mesothoracic lobe posteriorly, and the sheaths of the ovipositor, black; the scutellum has a dark line down the center; the hind coxæ, except at the extreme apex, are wholly yellow.

Brazil: Chapada, in April. One specimen.

SPILOCHALCIS CHAPADÆ, sp. nov.

Male.—Length 3.8 mm. Yellow; legs and flagellum brown; middle mesothoracic lobe anteriorly and the tip of the metathorax black or dusky, the hind coxæ above reddish or ferruginous; abdomen ferruginous, the body oblong oval, with some fuscous or blackish stains or marks at sides toward apex, the petiole longer than the metathorax. Wings hyaline, with a fuscous cloud from the apex of the stigmal vein.

Brazil: Chapada, in April. One specimen.

This may be the male of *S. imitator.*

SPILOCHALCIS ALBOMACULATA, sp. nov.

Female.—Length 7 mm. Head black, with the hind and front orbits, the clypeus, the face, the mandibles, except teeth, and the scape, yellowish-white; thorax black, with the dorsum of pronotum, margins of the middle mesothoracic lobe, the outer margins of the lateral lobes, two large spots on scutellum, nearly confluent at apex, and the depression on each side of the metathorax, yellowish-white; petiole of abdomen and front and middle legs, yellowish-white; body of abdomen conic-ovate, the basal half pale ferruginous, the apical half black; hind legs mostly black, the hind coxæ reddish at base above, the hind femora with three large whitish spots, the tibiæ black or brown-black, the tarsi white.

Brazil: Corumba, in May. One specimen.

SPILOCHALCIS SANTAREMA, sp. nov.

Female.—Length 4 mm. Head mostly yellow, the occiput black, the vertex brownish at the middle; flagellum black; thorax black beneath and at apex, the pronotum yellow, the mesonotum reddish or reddish-brown, the lobes margined with yellow, the middle lobe blackish down the center, the scutellum black margined with yellow; body of abdomen ovate, ferruginous, the petiole yellow and about thrice as long as thick, the sheaths of the ovipositor black; the front and middle legs are entirely yellow, the hind legs are mostly black, their femora with a large yellow spot at the upper outer angle and a small spot beneath it, their tibiæ narrowly black or dark fuscous at base and at apical third, while the tarsi are yellow. Wings hyaline, the veins brown-black.

Brazil: Santarem. One specimen.

SPILOCHALCIS ERYTHROGASTER, sp. nov.

Female.—Length 5.5 mm. Black, coarsely punctate; orbits, face below insertion of antennæ, the dorsum of pronotum, the margins of the middle mesothoracic lobe, the lateral lobes outwardly, the tegulæ, two large spots on the scutellum, a spot enclosing the metathoracic spiracles, the short abdominal petiole, and the front and middle legs, yellow; the hind legs are mostly black, the tarsi, a spot at base of coxæ above and three spots on hind femora, yellow; body of abdomen ovate, rufous, the sheaths of the ovipositor black. Wings hyaline, the veins brown-black.

Brazil: Chapada and Santarem. Two specimens.

SPILOCHALCIS FLAVOAXILLARIS, sp. nov.

Female.—Length 7.5 mm. Black, coarsely punctate; orbits a Λ-shaped mark on the face below the insertion of the antennæ, the clypeus, the dorsum of the pronotum, except a line at the sides, the margins of the middle mesothoracic lobe, the outer margins of the lateral lobes, a line across the base of the scutellum and the axillæ, yellow; the abdomen, except the petiole, the base of the second segment, a band at the base of the third and fourth segments which are black, is mostly yellow; the front and middle legs are yellowish and ferruginous marked with black, the hind legs black and yellow; the hind coxæ are black with a small yellow spot at apex and a yellow stripe above, the hind femora are yellow with a black line at base, the outer face with a triangular black spot on basal half and a curved black line at apex; the inner face has two large black bands or stripes. Wings hyaline, with a yellowish tinge, the veins pale ferruginous.

Brazil: Santarem. One specimen.

SPILOCHALCIS MARGINATA, sp. nov.

Female.—Length 5 mm. Head, except the occiput and the scrobes which are black, yellow; flagellum black; dorsum of pronotum, except a small black spot on each side, the margins of the middle mesothoracic lobe and a small spot anteriorly, the outer margins of the lateral lobes, the scutellum except a large central black spot, the metathorax except a central black stripe, the tegulæ, a spot beneath, and the margins of the metapleura, yellow; legs mostly yellowish-white, the hind coxæ with a large black spot above, the hind femora with three black spots on outer face, a small spot above towards apex and a single spot on the inner face, black. Abdomen yellow, the dorsal segments banded with black.

Brazil: Santarem. One specimen.

SPILOCHALCIS TUBERCULATA, sp. nov.

Female.—Length 4 mm. Yellow; eyes and flagellum brown; lobes of mesothorax black margined with yellow; a spot on scutellum at base, a spot on metanotum and the pleura black. The abdomen is conic-ovate, ferruginous, the petiole yellow and about thrice as long as thick. The hind femora are armed with nineteen or twenty minute teeth beneath and have a black or brownish spot at apex. The face is armed with a very long tubercle, which originates from the ridge between the insertion of the antennæ.

Brazil: Chapada, in January. One specimen.

SPILOCHALCIS BIDENTATA, sp. nov.

Female.—Length 6.5 mm. Black, coarsely punctate; orbits, the face below the insertion of the antennæ, the scape beneath, the apex of flagellum, the prothorax, except a spot on each side of the front face of the pronotum, the margins of the middle mesothoracic lobe at sides and base and the outer and basal margins of the lateral lobes, a band all around the scutellum, the metathorax, and the upper part of the mesopleura, yellow; legs mostly yellow, the hind legs marked with black, the hind tibiæ with a black annulus at base and another one near the middle. The abdomen is yellowish or pale ferruginous, the dorsal segments, three and beyond, more or less blackish or fuscous.

Brazil: Santarem. One specimen.

SPILOCHALCIS MACULATA, sp. nov.

Female.—Length 6.5 mm. Black, coarsely punctate; orbits, a line connecting the ocelli, face below antennæ, cheeks, the scape, the dorsum of pronotum, except a triangular black spot at basal lateral angles, the margins of the middle mesothoracic lobe, the outer margins of the lateral lobes, the scutellum except a central black line, the metathorax except a transverse line at base, the tegulæ, a spot beneath, the anterior margin of the mesopleura, a large spot on the side of the metapleura and the legs, except the hind femora, yellow; the hind femora have a large black spot toward base, a black spot at apex beneath, and a black spot above toward apex. The abdomen is short ovate, banded with black, the petiole about four times as long as thick.

Brazil: Chapada, in December. One specimen.

SPILOCHALCIS HEMPELI sp. nov.

Female.—Length 8.5 mm. Head, except the occiput and the scrobes, which are black, yellow; scape and apex of the flagellum yellow, the first five joints of the funicle black; prothorax, except the front face, the margins of the middle mesothoracic lobe, the lateral margins of the lateral lobes, the scutellum except a large oblong, central black spot, the metathorax, except a narrow, central black line, the sides of the thorax and the legs, except the minute black teeth on the hind femora and a black stripe on the hind tibiæ *beneath*, yellow. The abdomen is conically produced, longer than the head and thorax united, the eighth segment being styliform, the petiole very short transverse; it is yellowish with dorsal segments three to six more or less dusky or fuscous basally and appearing banded, when viewed from above.

Male.—Length 5.4 mm. Differs from the female in the shape of the abdomen which is long oval, the petiole being about four times as long as thick, the dorsal segments not banded, while the hind femora have a large black spot on inner face near the upper margin.

Brazil: Santarem.

Named in honor of Mr. Adolph Hempel.

SPILOCHALCIS DEVIA, sp. nov.

Female.—Length 6 mm. Yellow; a spot on vertex extending on to the occiput, and a line in the antennal depression, black; flagellum brown at base but becoming fulvous from the third joint; thorax mostly yellow but marked with black as follows: The prothorax is yellow with a small black spot on each side *above* and a large transverse black band on the front face or the declivity; the middle mesothoracic lobe is black broadly margined with yellow, the lateral lobes black marked with yellow along the outer sides; the scutellum is yellow with a large, triangular, central black spot, and a transverse black line at base, dilated on the axillæ; the metathorax has a transverse black line at base. The abdomen is fusiform, pale ferruginous, except the petiole, the dorsum with four or five brownish bands, the sheaths of the ovipositor black; the petiole is yellow and about five times as long as thick. The hind femora are armed with thirteen or fourteen black teeth, while the hind tibiæ have a black spot on the outer face near the middle.

Brazil: Santarem. One specimen.

SPILOCHALCIS NIGROPLEURALIS, sp. nov.

Female.—Length 4.3 mm. Lemon-yellow, marked with black as follows: The occiput and a small spot in front of the lateral ocelli black; flagellum black; pronotum with a small spot on each side and a large median spot on the declivity or front face, black; mesothorax black, the lobes margined with yellow, the middle lobe also with a small yellow spot anteriorly; scutellum yellow, with a transverse line across the base, dilated on the axillæ, and a wedge-shaped central spot, black; basal suture of metathorax, the pleuræ, except spots beneath the insertion of the wings, black; the body of the abdomen is short, subovate, the dorsal segments two to seven medially more or less black; all the legs are yellow but marked with black as follows: The hind coxæ at apex, the trochanters, two large spots on the outer and inner face of hind femora and the base of the hind tibiæ, are black.

Male.—Length 4 mm. Colored and marked nearly as in the female, except the yellow spot on the middle mesothoracic lobe is greatly enlarged and divides the black into two parts, while the pleuræ, except the femoral furrow, are yellow.

West Indies: Trinidad; Brazil: Chapada.

SPILOCHALCIS CORUMBICOLA, sp. nov.

Male.—Length 6 mm. Lemon-yellow; occiput, scrobes and the scape *above*, black; flagellum brown-black, fulvous beneath; pronotum with a median spot on the front face and a small spot on the dorsum opposite the parapsidal furrows, black; mesothoracic lobes black margined with yellow, the middle lobe also with a yellow median spot; scutellum with a transverse black line at base and a narrow black line down the center; hind femora with a small rounded spot on outer and inner face and the minute teeth, about fourteen, black. The body of the abdomen is oval, mostly ferruginous, the dorsal segments tinged with fuscous basally, while the petiole is yellow and about twice as long as thick.

Brazil: Corumba, in April. One specimen.

SPILOCHALCIS MÜLLERI, sp. nov.

Female.—Length 0 mm. Yellow, the occiput black, the black extending forward on the vertex and enclosing the ocelli; flagellum brown-black basally, the four or five apical joints fulvous; mesothoracic lobes black broadly margined with yellow, the black on the middle lobe with usually a central yellow spot; scutellum with a central black line and a black line across the base. The abdomen is elongate lanceolate or fusiformly pointed, longer than the head and thorax united, the eighth segment long, styliform, the petiole very short, transverse.

Brazil: Santarem. Three specimens.

Dedicated to the memory of Dr. Fritz Müller.

SPILOCHALCIS HOWARDI, sp. nov.

Female.—Length 7 mm. Yellow; the occiput, scrobes, a broad median line extending from the insertion of the antennæ forwards to the mandibles, the 3-dentate mandibles, the antennæ, a median band on the middle mesothoracic lobe widened anteriorly, a large spot on the lateral lobes, a central line on the scutellum, the femoral furrow on the mesopleura and anteriorly, the lower part of metapleura, the depression on each side of the metanotum, spots on front and middle coxæ, a large spot on the hind coxæ at base beneath, their apices, the abdominal petiole and bands on the dorsal abdominal segments, black. The body of the abdomen is fusiformly pointed, blackish at apex, the about three times as long as thick. The hind femora are armed with about twenty small teeth.

Brazil: Chapada, in November. One specimen.

Named in honor of Dr. L. O. Howard.

SPILOCHALCIS INSULARIS, sp. nov.

Male.—Length 5 mm. Yellow; a spot on occiput, a median spot on the front face of the pronotum, the sutures of the mesothoracic lobes, a line down the center of the middle lobe, a spot on the lateral lobes, a central line on the scutellum, a median line on the metanotum, the front margin of the mesopleura, a stripe on hind coxæ *beneath* and *above*, and three or four bands on the dorsal abdominal segments, black. The hind femora are armed with about twenty minute, black teeth.

West Indies: Trinidad.

SPILOCHALCIS TRINIDADENSIS, sp. nov.

Female.—Length 9 mm. Yellow; a spot on the occiput, the scrobes, the antennæ, except the scape beneath, a median line on front face of the pronotum, the sutures of the mesothoracic lobes, a central line on the middle lobe, a large spot on the lateral lobes, a central line on the scutellum, a median line on the metathorax, a spot on the mesosternum anteriorly, the femoral furrow on the mesopleura, a stripe on the hind coxæ *above*, and six bands on dorsum of abdomen, black. The abdomen is fusiformly pointed, a little longer than the head and thorax united, the petiole short, not longer than thick. The hind femora are armed with from twenty to twenty-two minute teeth.

West Indies: Trinidad. One specimen.

SPILOCHALCIS INCONGRUA, sp. nov.

Male.—Length 6 mm. Yellow, with black markings very nearly as in *S. trinidadensis* but with the following differences: The metathorax is *without* the median black line, the antennæ are wholly yellow, except the flagellum *above*, the hind coxæ have a small black spot *above*, while their extreme apices, including the first joint of the trochanters, are black; the hind femora have two black spots on outer face, one near the middle, the other at the apex and are armed with sixteen to seventeen small, black teeth; the hind tibiæ are entirely yellow.

Brazil: Chapada, in April. One specimen.

SPILOCHALCIS MAYRI, sp. nov.

Female.—Length 5.5 mm. Yellow; occiput with a transverse black spot; flagellum brown-black; a small median spot on front face of pronotum, the parapsidal furrows, a transverse line on the anterior margin of the middle mesothoracic lobe and a longitudinal line down the center, a small spot on each lateral lobe, a median line on the scutellum, a line in the mesopleural furrow and a spot on the hind coxæ *above* black.

The abdomen is long, lanceolate, about twice as long as the head and thorax united, the petiole very short transverse, the dorsal segments more or less banded with fuscous, the terminal segment styliform. The hind femora are armed with one large tooth, followed by fourteen or fifteen minute teeth.

Brazil: Chapada, in May. One specimen.

SPILOCHALCIS TIMIDA, sp. nov.

Female.—Length 4 mm. Yellow, with the black markings much as in *S. incongrua* but with the following differences: The flagellum is wholly black, the hind coxæ have the apices alone black, the hind femora have two black spots and are armed with about seventeen small black teeth, while the hind tibiæ are black at base.

Brazil: Corumba, in April.

Spilochalcis biannulata, sp. nov.

Female.—Length 5.5 mm. Yellow, with the black markings much as in *S. timida*, but differing as follows: The black lines on the middle mesothoracic lobe form an anchor-shaped mark ⊥, the scutellum has an acute wedge-shaped black spot at apex, the hind femora have a large, irregular, black spot at basal third and a small black spot at apex below, while the hind tibiæ have two black rings, one at base, the other near the middle. The abdominal petiole is rather slender and four or more times longer than thick, the body of abdomen being ovate, black at apex and with some fuscous stains on the dorsal segments.

Brazil: Santarem. One specimen.

Spilochalcis medius, sp. nov.

Female.—Length 4 mm. Yellow, with black markings much as *S. timida*, but differing as follows: The black central line on the middle mesothoracic lobe is only slightly dilated, the spots on the lateral lobes are smaller, nearly round and do not touch the parapsidal furrow as in *S. timida*, the hind femora have only a small black spot at apex and are armed with seventeen or eighteen minute black teeth, while the body of the abdomen is conic-ovate, black at tip, the petiole not slender, about thrice as long as thick.

Brazil: Corumba, in March. One specimen.

Spilochalcis cameroni, sp. nov.

Female.—Length 4.5 mm. Yellow, with the black markings much as in *S. medius*, only the middle mesothoracic lobe has besides the median black line two other lines anteriorly, between the parapsidal furrows and the median line, that extend to the middle of the lobe; the hind femora have a black spot at base and a black spot at apex and are armed with about sixteen small black teeth; while the abdomen is conically pointed, blackish at apex, the dorsal segments stained with fuscous near the sutures, the petiole being about twice as long as thick.

Brazil: Rio de Janeiro. One specimen.

Spilochalcis enocki, sp. nov.

Female.—Length 5.75 mm. Yellow, with black markings as follows: The sutures of the mesonotum, a central line on the middle mesothoracic lobe, an oblong spot on the lateral lobes, a central line on the scutellum, a stripe on front margin of the mesosternum and a spot or line in the mesopleural furrow, are black; legs immaculate, the hind femora armed with about seventeen minute teeth, the teeth tipped with black; abdomen fusiformly pointed, the sheaths of the ovipositor black, the dorsal segments more or less stained with fuscous, the petiole being about twice as long as thick.

West Indies: Trinidad.

Named in honor of Mr. Frederick Enock.

SPILOCHALCIS FUSIFORMIS, sp. nov.

Female.—Length 6.5 mm. Yellow, with black markings as follows: The parapsidal furrows, the suture at base of the scutellum, a median line on the scutellum, a central line on the middle mesothoracic lobe and two additional short lines anteriorly, one on each side of the central line, that extend to nearly half the length of the lobe, and a spot at base of the metanotum, black; flagellum brown-black above. The abdomen is elongate, fusiform, or lanceolate, as seen from the side, and longer than the head and the thorax united; the sheaths of the ovipositor alone being black; the petiole is very short, wider than long. The legs are immaculate, the hind femora being armed with about seventeen small black or black-tipped teeth.

Brazil: Porto Branca. One specimen.

SPILOCHALCIS URICHI, sp. nov.

Male.—Length 4 mm. Yellow marked with black as follows: The occiput, a central line on the middle mesothoracic lobe that is connected with a transverse line along the front margin, a large oblong spot on the lateral lobes, a line across the base of the scutellum and a wedge-shaped spot at apex, a spot in the mesopleural furrow, apex of hind coxæ, the base of hind femora, an oblong spot on disk of outer face and a spot at apex, and the hind tibiæ, except a broad yellow annulus, black.

The hind femora are armed with about twenty-five minute black teeth.

West Indies: Trinidad.

Named in honor of Mr. F. W. Urich.

SPILOCHALCIS AXILLARIS, sp. nov.

Female.—Length 4 mm. Yellow marked with black as follows: The occiput, a spot on front face of pronotum, a broad central black line on the middle mesothoracic lobe, not quite extending to the anterior margin, a small spot on each side of this line anteriorly, a large oblong spot on the lateral lobes, a large spot at apex of the scutellum, the sutures at base and the axillæ, a spot at base of metathorax, a line in the mesopleural furrow, the apex of the hind coxæ, a spot at apex of hind femora, the apical third of hind tibiæ and some spots on the dorsum of abdomen, black.

The flagellum is black or brown-black, the scape and pedicel being yellow. The abdomen is conic-ovate, the petiole being about five times as long as thick. The hind femora are armed with seventeen small teeth.

Brazil: Santarem. One specimen.

SPILOCHALCIS TRILINEATA, sp. nov.

Female.—Length 5.5 mm. Yellow; a short line on the middle of the occiput, a large spot on the front face of the pronotum, a central line on the middle mesothoracic lobe connected with a transverse line anteriorly, an abbreviated line on the inner margins of the lateral lobes, a median line on the scutellum, and a line across the base, black. The hind femora are armed with seventeen or eighteen minute teeth. The abdomen is conic-ovate, the petiole being more than five times as long as thick.

Brazil: Santarem.

SPILOCHALCIS MARSHALLI, sp. nov.

Female.—Length 6.5–7 mm. Yellow; a line on scape above, the flagellum, a transverse spot at apex of the scutellum and a transverse line across the base, an abbreviated line along the inner margin of the lateral lobes of the mesonotum, a median line the entire length of the middle lobe, and two triangular spots on the anterior margin (one on each side of the median line), black. The abdomen is fusiform, the middle dorsal segments more or less blackish, or stained with fuscous, the base and apex, except the sheaths of the ovipositor, always yellow, the petiole being about twice as long as thick. The legs are immaculate, the hind femora armed with one large tooth, followed by about fifteen minute black teeth.

Male.—Length, 4–4.5 mm. Agrees in color with the female, but the body of the abdomen is long ovate, the petiole being a little more than three times as long as thick, while the basal tooth of the hind femora is followed by eighteen or nineteen minute black teeth.

West Indies: Trinidad. One female and three male specimens.

Named in honor of Rev. T. A. Marshall.

SPILOCHALCIS MORLEYI, sp. nov.

Female.—Length 5.5 mm. Yellow; a line on scape above towards the apex, the flagellum, a clavate, central spot on the scutellum connected with a transverse line at base, a line along the inner margins of the lateral mesothoracic lobes, a clavate median line on the middle lobe that is connected with a transverse line anteriorly, a small spot in the mesopleural furrow, the apex of hind coxæ, a spot at apex of hind femora, and two or three bands on the dorsum of the abdomen, black. The abdomen is short ovate, or subglobose, the petiole being a little more than three times as long as thick. The hind femora are armed with seventeen or eighteen minute teeth.

Brazil: Bahia. Taken by Mr. Albert Koebele, March 19, 1883. Named in honor of Mr. Claude Morley.

SPILOCHALCIS APICALIS, sp. nov.

Female.—Length 4 mm. Yellow; the apical half of the flagellum, a spot on the occiput, a spot on front face of the pronotum, a transverse spot at apex and a transverse line at base of scutellum, a median line the entire length of the middle mesothoracic lobe, a central black spot on the metathorax, the extreme tips of hind coxæ; and a spot at apex of hind femora, black. The abdomen is conic-ovate, the sheaths of ovipositor black, the petiole being at least three times as long as thick. The hind femora are armed with one large acute tooth, followed by twelve minute black teeth.

Brazil: Rio de Janeiro. One specimen.

SPILOCHALCIS UNILINEATA, sp. nov.

Female.—Length 6.5 to 7 mm. Yellow; the flagellum, a small spot on the occiput, a dot on front face of pronotum, a central line on the middle mesothoracic lobe, a transverse line at base of scutellum and a transverse spot at apex, and a spot at apex of hind femora, black. The abdomen is fusiformly pointed, longer than the head and thorax united, the apex and the sheaths of the ovipositor black, the petiole being more than three times as long as thick. The hind femora are armed with one large tooth, followed by about eighteen minute black teeth.

West Indies: Trinidad.

SPILOCHALCIS LINEOCOXALIS, sp. nov.

Female.—Length 4 mm. Yellow; the occiput in part, a line along the malar suture, teeth of mandibles, the flagellum above, a short line on the front face of the pronotum, a small spot at the apex of the scutellum, a longitudinal median line anteriorly and a transverse line at base, a median longitudinal line on the middle mesothoracic lobe and a line across the anterior margin, a line between the pro- and mesosternum, the mesopleural furrow, the metasternum, a stripe on hind coxæ *beneath* and bands on the dorsum of the abdomen, black. The abdomen is fusiform, the petiole about, or nearly, three times as long as thick. The hind femora are armed with a moderately large tooth followed by about twelve minute black teeth.

Brazil: Corumba, in May. One specimen.

SPILOCHALCIS FULLERI, sp. nov.

Female.—Length 7 mm. Yellow; a transverse spot on occiput, the flagellum, a triangular spot at apex of scutellum and three triangular spots at base, an oblong spot on the lateral lobes of the mesothorax, two lines on the middle lobe anteriorly for about two thirds its length, a spot at apex of hind coxæ *above*, a spot at apex of hind femora and the sheaths of the ovipositor, black. The abdomen is fusiform, longer than the head and thorax united, the petiole being only twice as long as thick. The hind femora are armed with one large tooth, followed by about sixteen minute black teeth.

West Indies: Trinidad. One specimen.

Named in honor of Mr. Claude Fuller.

SPILOCHALCIS CORUMBENSIS, sp. nov.

Female.—Length 9 mm. Yellow; the occiput, the flagellum, a minute dot towards apex of the scutellum, the suture across its base, a spot on the lateral lobes of the mesothorax, a loop on the middle lobe anteriorly, a small spot in the mesopleural furrow, and the extreme apex of hind coxæ, black.

The abdomen is fusiformly pointed, longer than the head and thorax united, the petiole very short, transverse. The hind femora are armed with fourteen or fifteen minute teeth.

Brazil: Corumba, in April. One specimen.

SPILOCHALCIS CHAPADÆ, sp. nov.

Female.—Length 4.3 mm. Yellow; the occiput, scrobes, flagellum, a median longitudinal line on scutellum and the suture at base, a broad line along the inner margins of the lateral mesothoracic lobes, a loop connected with a short median line from the base of the scutellum, on the middle lobe, the mesopleural furrow, the apex of the hind coxæ, a small oblong spot on disk of the outer face of the hind femora and a spot at apex, and most of the body of the abdomen, black.

The abdomen is conic-ovate, the petiole at least thrice as long as thick. The hind femora are armed with fourteen or fifteen minute black teeth.

Brazil: Chapada, in April. One specimen.

SPILOCHALCIS BRANCENSIS, sp. nov.

Female.—Length 6 mm. Colored and marked very nearly as in *S. chapadæ*, except that the black spots on the lateral lobes of the mesothorax are shorter, the scutellum has a wedge-shaped black spot at the middle, the hind coxæ have a rounded spot *above*, while the hind femora have two black spots.

Structurally, however, there is no resemblance: The head in front is deeply semicircularly emarginate for the reception of the antennæ; the antennæ are separated at base by a sharp carina or spine; the hind coxæ are not nearly so long; the hind femora are armed with sixteen or seventeen small black teeth; while the abdomen is subglobose, the dorsal segments stained with black or piceous, the petiole about three times as long as thick.

Brazil: Porto Branca. One specimen.

SPILOCHALCIS VAGABUNDA, sp. nov.

Female.—Length 7.5 mm. Yellow, the head and thorax marked with black as in *S. brancensis* but structurally it is quite different: The head is broader, not deeply semicircularly emarginate in front; the abdomen is conically pointed, longer than the head and thorax united, the sheaths of the ovipositor black, the petiole short, not longer than thick; some of the dorsal segments are more or less banded with brown or black; the hind coxæ have a black spot at apex, their femora have a black line at base and along the lower or serrate edge, the same being connected with an arcuate black mark on the outer face and a spot at apex. The hind femora are armed with about eighteen minute black teeth.

Brazil: Santarem.

SPILOCHALCIS LANCEOLATA, sp. nov.

Female.—Length 5.5 mm. Colored and marked with black much as in *S. vagabunda*, except that the pleura are immaculate, the hind femora have a black spot only at apex and are armed with only fourteen minute black teeth. It also differs decidedly in the shape of the abdomen, which is long, lanceolate, the petiole being much longer, at least three times as long as thick.

Brazil: Santarem.

SPILOCHALCIS VAU, sp. nov.

Female.—Length 5 mm. Yellow; a spot on the occiput, a V-shaped mark on the middle mesothoracic lobe anteriorly, not connected with a black line posteriorly, a spot on each lateral lobe, a line across the base of the scutellum and an abbreviated longitudinal line on the disk, a line in the mesopleural furrow, an oblong mark on the outer face of the hind femora, the abdominal petiole, and bands on dorsal segments of the abdomen, black; scape and pedicel wholly yellow (flagellum broken off). The abdomen is ovate, the petiole being long, about six times as long as thick. The hind femora are armed with about fifteen minute black teeth.

Brazil: Chapada, in April. One specimen.

SPILOCHALCIS INCOMPLETA, sp. nov.

Female.—Length 6.0 mm. Yellow: marked with black as in *S. vau*, only the loop on the middle mesothoracic lobe is open posteriorly and there is a black line extending from it to the base of the scutellum, the scape has a black line *above*, the flagellum being wholly black, the hind coxæ have a small black spot near the middle *above*, the hind femora have a minute spot on the middle of the disk and a black spot at base and apex.

The abdomen is conically pointed, longer than the head and thorax united, the sheaths of the ovipositor and a slender band at base of dorsal segments 3 to 7, black; the petiole is hardly longer than thick. The hind femora are armed with one moderate sized tooth, followed by about eighteen minute black teeth.

Brazil: Corumba, in May. One specimen.

SPILOCHALCIS PERSIMILIS, sp. nov.

Female.—Length 4 mm. Yellow; the thorax marked with black as in previous species, except that the loop is complete, not interrupted before uniting with the median black line posteriorly; the hind coxæ and femora are immaculate.

The abdomen is conic-ovate, not so long nor so pointed as in previous species, the dorsal segments four to seven brownish or blackish, the petiole being three times as long as thick. The hind femora are armed with about fifteen minute black teeth.

Brazil: Corumba, in April. One specimen.

SPILOCHALCIS HOLLANDI, sp. nov.

Female.—Length 0.5 mm. Yellow; the occiput, a line on the scrobes enclosing the front ocellus, a line on the scape *above*, the flagellum, two median lines on the front face of the pronotum and a line on each side of the dorsum, two broad lines on the middle mesothoracic lobe anteriorly, a spot on the lateral lobes, three triangular spots at base of scutellum, the middle one being connected with a central line that extends to and terminates in a spot at the apex of the scutellum, a large rounded spot at base of hind coxæ *above*, the apex of hind coxæ, a spot at apex of hind femora, the extreme base of hind tibiæ and an annulus at the middle, all black.

The abdomen is conically produced, longer than the head and thorax united, the petiole only about twice as long as thick. The hind femora are armed with one large tooth, followed by about eighteen minute teeth.

Brazil: Santarem. One specimen.

Named in honor of Dr. W. J. Holland.

SPILOCHALCIS CORUMBÆ, sp. nov.

Female.—Length 7.5 to 8 mm. Yellow, marked with black as in *S. hollandi* except that the spots at base and apex of scutellum are not connected by a central black line, the hind coxæ being *without* the spot at base above, while the apical segment of the abdomen is wholly black, the petiole being hardly longer than thick- The hind femora are armed with one large tooth followed by fifteen or sixteen minute black teeth.

Brazil: Corumba; Porto Branca; West Indies: Trinidad.

SPILOCHALCIS PARAGUAYENSIS, sp. nov.

Male.—Length 6 mm. Yellow, marked with black as in *S. corumbæ*, except that the scutellum has a slender black line across the base and a triangular spot at apex; the hind coxæ have the apex black; the hind femora have black spot at apex as in *S. corumbæ*, but a large tooth is followed by seventeen or eighteen minute black teeth. The abdomen is fusiform, the petiole being three times as long as thick.

Paraguay: Villeta. One specimen.

SPILOCHALCIS DIMIDIATA, sp. nov.

Male.—Length 4.5 mm. Yellow; a spot on occiput, the ocelli, a small spot on each side of the dorsum of the pronotum, a quadrate spot at the base of the middle mesothoracic lobe, just in front of the scutellum, and two short longitudinal lines anteriorly, a spot on the lateral lobes, a triangular spot at apex of the scutellum, and the apical half of the abdomen, black. The body of the abdomen is ovate, the petiole being long, a little more than four times longer than thick. The hind femora are armed with sixteen or seventeen minute, black teeth.

Brazil: Chapada, in October. One specimen.

SPILOCHALCIS MERIDIONALIS, sp. nov.

Female.—Length 4 mm. Yellow; the occiput, the flagellum, two triangular spots on the anterior margin of the middle mesothoracic lobe, a faint dot on the lateral lobes, the axillæ and a spot at base of scutellum, a median line on the metanotum and its apex, the extreme apex of hind coxæ, a spot at apex of hind femora, and the sheaths of the ovipositor, black.

The abdomen is conic-ovate, the petiole being a little more than three times as long as thick; the dorsal segments are more or less stained with brown or fuscous.

The hind femora are armed with one large acute tooth, followed by thirteen or fourteen smaller teeth, those near the apex being very minute.

West Indies: Trinidad. One specimen.

SPILOCHALCIS TRIPUNCTATA, sp. nov.

Male.—Length 3.5 mm. Yellow; a spot on the occiput, the flagellum *above*, the sutures surrounding the middle mesothoracic lobe, a minute spot on the disk of the lateral lobes, an elongate spot on the middle of the middle lobe, a delicate longitudinal line down the center of the scutellum, a line in the mesopleural furrow, and a spot on the outer face of hind coxæ, near the middle, black.

The abdomen is conic-ovate, the dorsal segments narrowly banded with brown at base, the petiole hardly more than twice longer than thick. The hind femora are armed with about fourteen minute black teeth.

Type.—Cat. No. 7317 U. S. N. M.

Brazil: Bonito Prov. Pernambuco (Mr. Albert Koebele).

SPILOCHALCIS BIPUNCTATA, sp. nov.

Female.—Length 5.5 mm. Yellow; immaculate, except two black spots on the mesothorax (a spot on each lateral lobe) and two spots on the hind femora; flagellum brown. The abdomen is subglobose, the petiole short, hardly as long as wide. The hind femora are armed with ten or eleven small teeth.

Type.—Cat. No. 7318 U. S. N. M.

Brazil: Bonito Prov. Pernambuco (Mr. Albert Koebele).

XANTHOMELANUS Ashmead, gen. nov.

In this genus the metathorax is quadridentate posteriorly, two teeth on each side of the petiole; the plate at apex of the scutellum is emarginate or bidentate, while the hind femora are armed with several large teeth.

XANTHOMELANUS DIMIDIATUS (Fabricius).

(Plate XXXI., Fig. 5.)

Chalcis dimidata Fabricius, Syst. Piez., 1804, p. 160.—Dalla Torre, Cat. Hym., V., 1898, p. 387.

Conura dimidiata Sichel, Ann. Soc. ent. France (4), V., 1865, pp. 360, 390, ♀.

Smicra dimidiata Cresson, Trans. Am. Ent. Soc., IV., 1872, p. 56, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 376.

Smiera melanoptera Walker, Journ. Entom., I., 1861, p. 180, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 379.

Brazil: Venezuela; West Indies: Trinidad.

MELANOSMICRA Ashmead, gen. nov.

This genus in having the metathorax quadridentate agrees with *Xanthomelanus* but otherwise it is quite distinct. The scutellum is normal, unarmed; the antennæ are long, the scape reaching beyond the ocelli; while in its abdominal characters it shows some affinity with *Ceratosmicra*, only the petiole is not so long as in typical species. The black color of the head and thorax is characteristic.

MELANOSMICRA CLAVATA (Fabricius).

Chalcis clavata Fabricius, Syst. Piez., 1804, p. 162.—Dalla Torre, Cat. Hym., V., 1898, p. 387.

Brazil.

MELANOSMICRA IMMACULATA, sp. nov.

Male.—Length 5 mm. Head and thorax entirely black; scape of antennæ, the front and middle legs, the hind tarsi, and the long abdominal petiole, yellow; body of abdomen red; flagellum filiform, brown-black; while the hind legs, except the tarsi, are pale ferruginous.

Brazil: Chapada, in December.

Genus THAUMAPUS Kirby.

THAUMAPUS DECORUS (Walker).

Smiera decora Walker, Notes on Chalc., Pt. 3, 1871, p. 54, ♂.

Thaumapus decorus Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 56.—Dalla Torre, Cat. Hym., V., 1898, p. 403.

Brazil.

THAUMAPUS MASUS (Walker).

Smiera masus Walker, The Entom., I., 1841, p. 134, ♀ ♂.

Thaumapus masus Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 56.—Dalla Torre, Cat. Hym., V., 1898, p. 403.

Brazil.

THAUMAPUS WALKERI Kirby.

Thaumapus walkeri Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 74, ♂. —Dalla Torre, Cat. Hym., V., 1898, p. 403.

? *Smiera luteipennis* Walker, Journ. Entom., I., 1861, p. 173, ♀.

Brazil: St. Paulo (Mr. Bates).

THAUMAPUS ACUMINATUS, sp. nov.

Female.—Length 9 mm. Reddish-yellow; a line on the scape *above*, the flagellum, a triangular spot at apex of the scutellum and a transverse line at base, a spot on the lateral mesothoracic lobes, a curved line anteriorly on the middle lobe, interrupted medially, the extreme apex of the hind coxæ, the large femoral teeth, and some spots on the dorsum of the abdomen, black. The abdomen is long, lanceolate and ends in a long stylus. The hind femora are armed with six large teeth, the last tooth very large and tricuspidated.

Brazil: Santarem. One specimen.

Genus EPINÆUS Kirby.

EPINÆUS DUX (Walker).

Smiera dux Walker, Journ. Entom., I., 1861, p. 173, ♀.

Epinæus dux Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 58.—Dalla Torre, Cat. Hym., V., 1898, p. 395.

Brazil: Para (Bates).

ENNEASMICRA Ashmead, gen. nov.

In this genus the hind femora are armed with nine moderately large teeth and the scutellum is usually bidentate or emarginate at apex, rarely normal.

ENNEASMICRA EXINANIENS (Walker).

Smiera exinaniens Walker, Trans. Ent. Soc. London (3), II., 1864, p. 198, ♀.

Smicra exinaniens Dalla Torre, Cat. Hym., V., 1898, p. 377.

Brazil.

ENNEASMICRA CORUMBENSIS, sp. nov.

Female.—Length 6.5 mm. Yellow; a spot on the occiput, a small dot on the middle of the front face of the pronotum, an oblong spot on the inner margin of the lateral mesothoracic lobes anteriorly, two long triangular spots on the middle lobe anteriorly and a median line posteriorly, a spot at apex of the scutellum which is connected with a central line, the mesopleural furrow, a small spot on the hind coxæ near the base, and three spots on the hind femora, black. The abdomen is conic-ovate, the body brownish or fuscous above, the petiole hardly twice as long as thick and yellow. The hind femora are armed with nine large, black teeth, the last two more or less united at base.

Brazil: Corumba in April. One specimen.

ENNEASMICRA INCERTA, sp. nov.

Male.—Length 7 mm. Reddish golden brown; the flagellum, a large median spot on the front face of the pronotum, a transverse spot at apex of the scutellum and a transverse line at base, both being connected by a central line, a spot on the lateral mesothoracic lobes, a large triangular spot extending from the anterior margin of the middle lobe, and a spot at the apex of the metanotum, black. The abdomen is oblong-oval, the petiole a little more than three times as long as thick, the dorsal segments tinged with brown. The hind femora are about thrice as long as wide and armed with nine large, black teeth.

Brazil: Corumba, in May. One specimen.

Genus PROTOCERAS Kirby.

PROTOCERAS CAUDATUS (Guérin).

Chalcis caudatus Guérin, Iconogr. régn. anim., VII., Insect., 1845, p. 412; T. 6, f. 6.
Protoceras caudatus Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 60.—Dalla Torre, Cat. Hym., V., 1898, p. 370.

Brazil.

PROTOCERAS LEUCOTELUS (Walker).

Smicra leucotelus Walker, Journ. Entom., I., 1861, p. 181, ♀.
Protoceras leucotelus Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 60.—Dalla Torre, Cat. Hym., V., 1898, p. 370.

Brazil.

OCTOSMICRA Ashmead, gen. nov.

This genus comes near *Protoceras* Kirby, agreeing with it in having the hind femora armed with eight large teeth, but differs in having the parapsidal furrows distinct, entire; the plate at the apex of the scutellum is emarginate or bidentate, while the abdomen, in the female, is lanceolate or conically produced, the eighth segment usually long or styliform.

OCTOSMICRA ATTALICA (Walker).

Smicra attalica Walker, Trans. Ent. Soc. London (3), II., 1864, p. 193, ♂.
Smicra attalica Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil.

OCTOSMICRA CORRECTA (Walker).

Smicra correcta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 191, ♀.
Smicra correcta Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil.

? OCTOSMICRA REFERATOR (Walker).

Smicra referator Walker, Trans. Ent. Soc. London (3), I., 1862, p. 347, ♀.
Smicra referator Dalla Torre, Cat. Hym., V., 1898, p. 381.

Brazil.

OCTOSMICRA NIGROACMULATA, sp. nov.

Male.—Length 8 mm. Yellowish-red; the scrobes, a dot on face, a dot on the clypeus, the teeth of mandibles, a spot on middle of the pronotum anteriorly, a large triangular spot on the middle mesothoracic lobe, a spot on each lateral lobe, a transverse spot at base of the scutellum, another near the apex, a spot at base of the metanotum connected with a median line, a line along the front margin of the mesopleura, the femoral furrow, and the flagellum, black. The triangular black spot on the middle mesothoracic lobe is interrupted by a reddish spot anteriorly. Wings hyaline, the veins testaceous. The hind femora are armed with eight teeth, the teeth tipped with black; the first or basal tooth is long, acute, the following triangular, about equal in size.

Brazil: Chapada, in May. One specimen.

OCTOSMICRA TRIMACULATA, sp. nov.

Female.—Length 10 mm. Yellowish-red, with a spot on each lateral lobe of mesonotum and at the apex of the scutellum, black. The body of the abdomen is conically pointed, the terminal segment styliform, the sheaths of the ovipositor at apex and the ovipositor, black; the dorsal segments are stained with brown or blackish marks. The femoral furrow of the mesopleura has a black spot low down, but otherwise, except as noted, the thorax is immaculate. The hind femora are as in *O. nigromaculata,* except that the teeth, after the first, are not nearly equal in size, the second tooth being small, the eighth tridentate at apex or tricuspidated, so that the femora appear as if ten-dentate.

Brazil: Corumba in May. One specimen.

HEPTASMICRA Ashmead, gen. nov.

The hind femora in this genus are armed with seven large teeth, the second usually reduced in size and sometimes tricuspidate: the abdomen is fusiform or conically produced, rarely ending in a stylus; while the mandibles in the female are bidentate, in the male tridentate.

HEPTASMICRA ADSCITA (Walker).

Smiera adscita Walker, Trans. Ent. Soc. London (3), II., 1864, p. 193, ♀.
Smicra adscita Dalla Torre, Cat. Hym., V., 1898, p. 373.

Brazil.

HEPTASMICRA CAPTIVA (Smith).

Smiera captiva Smith, Trans. Ent. Soc. London (3), I., 1862, p. 42, ♀.
Smicra adaptata Walker, Trans. Ent. Soc. London (3), II., 1864, p. 190, —.
Smicra captiva Marshall, Ann. Soc. ent. France, LXI., 1892, p. 70; Pl. 4, f. 1.—Dalla Torre, Cat. Hym., V., 1898, p. 374.

Brazil: Maruru, in April; Venezuela: Corozal.

HEPTASMICRA CHYSOMERA (Walker).

Smiera chysomera Walker, Journ. Ent., I., 1861, p. 182, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 374.

Brazil: St. Paul (Mr. Bates).

HEPTASMICRA OBLITERATA (Walker).

Smiera obliterata Walker, Journ. Entom., I., 1861, p. 175, ♀ ♂.
Smicra obiterata Dalla Torre, Cat. Hym., V., 1898, p. 380.

Brazil: Santarem; Chapada; Corumba; Rio de Janeiro.

HEPTASMICRA PERSIMILIS, sp. nov.

Female.—Length 11 mm. Reddish-yellow, with black marks as in *H. lineaticoxis*, except that the black on the middle mesothoracic lobe is interrupted by a reddish-yellow spot anteriorly, the hind coxæ being immaculate, while the dorsal abdominal segments are banded with black.

The body of the abdomen is much larger and longer than in *H. lineaticoxis*, the petiole being about five times as long as thick.

Brazil: Santarem. One specimen.

HEPTASMICRA AFFINIS, sp. nov.

Female.—Length 9.2 mm. Colored as in *H. lineaticoxis*, except the back of the head, the forehead and the scrobes are wholly black; the hind coxæ have two black stripes instead of one; the hind femora have a black band at base, along the lower margin, besides a spot on the *inner* face; while the hind tibiæ, except at the basal third, are black.

The abdomen is totally different in shape; it is lanceolate, much longer than the head and thorax united, with a very short petiole, which is wider than long; the dorsal segments are banded with black.

Brazil: Santarem. Two specimens.

HEPTASMICRA LONGICAUDATA, sp. nov.

Female.—Length 8.5 mm. Colored as in *H. lineaticoxis*, except that the hind coxæ are immaculate except at extreme apex above, while the hind tibiæ are black or dark fuscous, with a yellowish annulus before the middle.

The abdomen is long, lanceolate and terminates in a long, compressed stylus, as long as the previous segments united; the petiole is very short, wider than long.

Brazil: Maruru, in April. One specimen.

HEPTASMICRA LINEATICOXUS, sp. nov.

Female.—Length 9.5 mm. Reddish-yellow; a transverse spot on the occiput, a spot in the frontal depression, the flagellum, a triangular spot on the scutellum extending from its apex, an oblong spot on the lateral mesothoracic lobes anteriorly, the middle mesothoracic lobe, except the outer margins broadly, the sheaths of the ovipositor, and a line on the hind coxæ *above*, black.

The body of the abdomen is long-ovate, the petiole very long, six or more times longer than thick. The hind femora are armed with seven large teeth, the first three very acute, the following broader and rounded at apex.

Brazil: Santarem. Four specimens.

HEPTASMICRA QUADRIMACULATA, sp. nov.

Male.—Length 6 mm. Yellow; a line on the scape *above*, the flagellum, two triangular spots on the anterior margin of the middle mesothoracic lobe, a small spot on each of the lateral lobes and the terminal ventral segment, black.

The abdomen is long-ovate, the petiole a little more than twice as long as thick; the dorsal segments are more or less marked with brown or fuscous stains. The hind femora are armed with seven black tipped teeth, all large, except the second, which is small.

Brazil: Corumba, in May.

Genus METADONTIA Ashmead.

METADONTIA FLAVOLINEATA, sp. nov.

Female.—Length 7 mm. Black; a dot between the ocelli, front orbits, cheeks pronotum above, a line on each side of the middle mesothoracic lobe, abbreviated posteriorly, a transverse line at base of the scutellum, another at apex, the metathorax, a spot beneath the tegulæ, the front legs from the tips of the femora, the middle tarsi, the hind coxæ, except apices and a broad line beneath, a transverse line near apex of hind femora both outwardly and inwardly, an annulus on the hind tibiæ near the middle, the abdomen at base, including the petiole and second segment, and an elongate spot at tip of abdomen *above*, yellow.

The ridge or plate at the apex of the scutellum is emarginate and wholly yellow.

Brazil: Santarem. One specimen.

Resembles *Metadontia* (*Chalcis*) *nigricornis* Fabr. but differs in the color of the hind legs and by the emarginate plate at apex of the scutellum.

METADONTIA SIMILIS, sp. nov.

Male.—Length 5 mm. Colored very much as in *M. flavolineata*, but the pronotum above, although yellow, has a black spot at the sides posteriorly; the scutellum is margined all around with yellow, the axillæ being black; the metathorax, except a central black spot, is yellow; the front and middle legs, except the first joint of the trochanters *above* and the base of the femora *above* for about two thirds their length, are yellow; the hind coxæ except at basal third are black: the hind femora are mostly yellow, but outwardly have a large black spot at base, connected with a black line beneath, above on the ridge is a black line at the basal two thirds, which itself is connected with a black line on the inner face: the inner face has also a black spot; the hind tibiæ are black except the apical two thirds of the *outer* face; the hind tarsi are yellow.

The abdomen is yellow, the dorsal segments banded with black.

Brazil: Santarem. One specimen.

Allied to *M. nigricornis* Fabr.

METADONTIA AFFINIS, sp. nov.

Female.—Length 6 mm. Black and marked with yellow much as in *M. similis.* The front orbits, the cheeks, scape entirely, pronotum above, except a small black spot on each side, a line on each side of the middle mesothoracic lobe clear to the base of the scutellum, the outer margins of the lateral lobes, the sides and apex of the scutellum, except a median black spot on the emarginate plate at apex, yellow.

The legs are as in *M. similis* except that the hind femora are black, with a curved yellow line on outer face near apex, the base being margined with yellow, within similarly marked; femoral teeth, two and three small, the others larger. The abdomen is mostly black, the petiole yellow, the second segment (first body) reddish except at apex above.

Brazil: Santarem. One specimen.

HEXASMICRA Ashmead, gen. nov.

In having the hind femora armed with six large teeth this genus comes nearest to *Metadontia* Ashm., but is easily separated from it by the totally different shaped abdomen, which is lanceolate or fusiform, longer than the head and thorax united, the petiole being short, not longer than thick. The scutellum at apex is usually bidentate or emarginate.

HEXASMICRA TRANSVERSA (Walker).

Smiera transversa Walker, Journ. Entom., I., 1861, p. 182, ♀ ♂.

Smicra transversa Dalla Torre, Cat. Hym., V., 1898., p. 383.

Brazil: Ega; Tapayos (Mr. Bates); Chapada; Santarem. Two female and seven male specimens.

? HEXASMICRA TRINIDADENSIS, sp. nov.

Female.—Length 4 mm. Yellow; a transverse spot on the occiput, the flagellum above, a transverse line at base of scutellum, the femoral teeth and the apex of the hind tibiæ black. The abdomen is fusiform, the petiole at least five times as long as thick, the middle dorsal segments stained with black or fuscous. The hind femora are armed with six large teeth, the first four acute, the last two broad, rounded at apex.

West Indies: Trinidad.

? HEXASMICRA BRASILIENSIS, sp. nov.

Male.—Length 4 mm. Yellow; a transverse spot on the occiput, the flagellum, a transverse line on the anterior margin of the middle mesothoracic lobe and a delicate median line posteriorly, a spot on the axillæ, a median line on the scutellum posteriorly and the femoral teeth, black. The abdomen is ovate, the petiole being about three times as long as thick. The hind femora are armed with six large teeth, all acute.

Brazil: Corumba, in May.

PENTASMICRA Ashmead, gen. nov.

In this genus the hind femora are armed with five large teeth; eyes large, occupying nearly the whole sides of the head; mandibles three-dentate; while the scutellum at apex is bidentate.

PENTASMICRA APERTA (Walker).

Smiera aperta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 187, ♀.
Smicra aperta Dalla Torre, Cat. Hym., V., 1898, p. 373.
Brazil.

PENTASMICRA APPRESSA (Walker).

Smiera appressa Walker, Trans. Ent. Soc. London (3), II., 1864, p. 186, ♀.
Smicra appressa Dalla Torre, Cat. Hym., V, 1898, p. 373.
Brazil.

PENTASMICRA BRASILICA (Walker).

Smiera brasilica Walker, Trans. Ent. Soc. London (3), II., 1864, p. 188, ♀.
Smicra brasilica Dalla Torre, Cat. Hym., V., 1898, p. 374.
Brazil.

PENTASMICRA CERINA (Walker).

Smiera cerina Walker, Trans. Ent. Soc. London (3), II., 1864, p. 187, ♂.
Smicra cerina Dalla Torre, Cat. Hym., V., 1898, p. 374.
Brazil.

PENTASMICRA CERTA (Walker).

Smiera certa Walker, Trans. Ent. Soc. London (3), II., 1864, p. 187, ♀.
Smicra certa Dalla Torre, Cat. Hym., V., 1898, p. 374.
Brazil.

PENTASMICRA COMMODA (Walker).

Smiera commoda Walker, Trans. Ent. Soc, London (3), II., 1864, p. 195, ♀.
Smicra commoda Dalla Torre, Cat. Hym., V., 1898, p. 374.
Brazil.

PENTASMICRA CONTEMINATA (Walker).

Smiera conteminata Walker, Trans. Ent. Soc. London (3), II., 1864, p. 194, ♀.
Smicra conteminata Dalla Torre, Cat. Hym., V., 1898, p. 375.
Brazil.

(?) PENTASMICRA EFFICTA (Walker).

Smiera efficta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 184, ♂.
Brazil: Amazon.

PENTASMICRA SCISA (Walker).

Smicra scisa Walker, Trans. Ent. Soc. London (3), II., 1864, p. 192, ♂.
Smicra scisa Dalla Torre, Cat. Hym., V., 1898, p. 381.

Brazil: Amazon.

TETRASMICRA Ashmead, gen. nov.

This genus is at once recognized by the hind femora being armed with four large teeth and by the scutellum being emarginate or bidentate at apex.

TETRASMICRA CONCITATA (Walker).

Smicra concitata Walker, Trans. Ent. Soc. London (3), II., 1864, p. 183, ♀.
Smicra concitata Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil: Amazon region.

TETRASMICRA CROCATA (Walker).

(Plate XXXII., Fig. 2.)

Smicra crocata Walker, Trans. Ent. Soc. London (3), II., 1864, p. 186, ♀.
Smicra crocata Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil: Amazon region.

TETRASMICRA DESTINATA (Walker).

Smicra destinata Walker, Trans. Ent. Soc. London (3), II., 1864, p. 185, ♀.
Smicra destinata Dalla Torre, Cat. Hym., V., 1898, p. 376.

Brazil.

TETRASMICRA MACULATA (Fabricius).

Chalcis maculata Fabricius, Mant. Ins., I., 1787, p. 273.—Gmelin, Linn. Syst. Nat., Ed. 13ª, I., 1790, p. 274.—Oliver, Encyc. Méthod. Ins., V., 1790, p. 440.—Fabricius, Ent. Syst., II., 1793, p. 198.—Fabricius, Syst. Piez., 1804, p. 162.
Smicra maculata Walker, The Entom., I., 848, p. 287.
Smicra maculata Cresson, Trans. Am. Ent. Soc., IV., 1872, p. 57.—Dalla Torre, Cat. Hym., V., 1898, p. 378.

Brazil.

TRISMICRA Ashmead, gen. nov.

In this genus the hind femora are armed with three large, strong teeth; otherwise it is similar to *Tetrasmicra*.

TRISMICRA CONTRACTA (Walker).

Smicra contracta Walker, Trans. Ent. Soc. London (3), II., 1864, p. 184, ♂.
Smicra contracta Dalla Torre, Cat. Hym., V., 1898, p. 375.

Brazil: Amazon region.

TRIBE III. *Chalcitellini.*

No species is known in this tribe from South America.

TRIBE IV. *Haltichellini.*

Genus HALTICHELLA Spinola.

HALTICHELLA DORSALIS Walker.

Haltichella dorsalis Walker, Journ. Entom., I., 1861, p. 185, ♀.
Halticella dorsalis Dalla Torre, Cat. Hym., V., 1898, p. 397.
Brazil.

HALTICHELLA REMOTOR Walker.

Haltichella remotor Walker, Trans. Ent. Soc. London (3), I., 1862, p. 367, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 398.
Brazil.

Genus CONURA Spinola.

CONURA ANNULIPES (Spinola).

Smicra annulipes Spinola, Mem. accad. sc. Torino (2), XIII., 1851, p. 44, ♀.
Conura annulipes Sichel, Ann. Soc. ent. France (4), V., 1865, pp. 360 and 394, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 403.
Brazil.

CONURA FLAVICANS Spinola.

Conura flavicans Spinola, Mag. de Zool., VIII., 1837, p. 180, ♀, T. 180.—Blanchard, Hist. nat. Ins., III., 1840, p. 256.—Sichel, Ann. Soc. ent. France (4), V., 1865, pp. 359 and 387, ♀.—Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 58; Pl. 3, f. 26 and 27.—Dalla Torre, Cat. Hym., V., 1898, p. 403.
Brazil.

Genus ANTROCEPHALUS Kirby.

ANTROCEPHALUS PUNCTIGER (Fabricius).

Chalcis punctiger Fabricius, Syst. Piez., 1804, p. 167.
Antrocephalus punctigera (Howard) Journ. Linn. Soc. London, Zool., XXV., 1894, p. 81, ♀ ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 396.
Brazil.

Genus ASPIRHINA Kirby.

ASPIRHINA DUBITATOR (Walker).

Halticella dubitator Walker, Trans. Ent. Soc. London (3), I., 1862, p. 366.
Aspirhina dubitator Kirby, Journ. Linn. Soc. London, Zool., XVII., 1883, p. 60.—Dalla Torre, Cat. Hym., V., 1898, p. 399.
Brazil: Santarem.

TRIBE V. *Dirhinini.*

Genus HONTALIA Cameron.

HONTALIA CAMERONI, sp. nov.

(Plate XXXII., Fig. 4.)

Female.—Length 6.1 mm.; ovipositor 3.5 mm. Blue, with a slight greenish tinge the head and thorax coarsely punctate, the metanotum and the metapleura metallic green; abdomen æneous black, the petiole longitudinally striate, the second segment very large, smooth, impunctate, the following segments united not longer than the second and microscopically shagreened; eyes light brown; ocelli pale; antennæ brown; front and middle legs, except coxæ, ferruginous, the tarsi paler, more of a yellowish-white; hind legs æneous black, except the long coxæ which are bluish and the tarsi which are yellowish-white. Wings hyaline, tinged with yellowish, the veins light brown.

Brazil: Santarem. One specimen.

Named in honor of Mr. Peter Cameron.

HONTALIA KIRBYI, sp. nov.

(Plate XXXII., Fig. 5.)

Male.—Length 3.5 mm. Æneous black, reticulately punctate, the mesopleura with an opaque, shagreened depression that extends from the tegulæ to the middle coxæ, the metanotum with several carinæ; the hind tarsi, the front and middle legs, except coxæ, the thickened portion of the femora, and a large part of the tibiæ basally are honey-yellow or testaceous; the abdominal petiole is longitudinally striate, the second abdominal segment, except apically, being smooth and polished, the apex of the second segment and the following segments are finely microscopically punctate.

Brazil: Santarem. Two specimens.

FAMILY LXIII. EURYTOMIDÆ.

TRIBE I. *Aximini.*

Genus AXIMA Walker.

TABLE OF SPECIES.

I. Males. 5
  Females.
    Wings hyaline, *without* a blackish band at base. 2
    Wings hyaline, *with* a broad blackish band at base.
      Front legs, except tips of the tibiæ, red . . . . *A. spinifrons* Walker.

2. Pronotum not wholly black, red at the sides.. 3
   Pronotum wholly black; frontal spines distinct but not acute.
      Antennæ, except a streak on the scape beneath and at base, and the legs, except knees, tibiæ and tarsi, black; knees, tibiæ and tarsi honey-yellow, the middle and hind tibiæ faintly dusky at the middle; abdomen wholly black.............................***A. koebelei***, sp. nov.
3. Frontal spines very minute, nearly obsolete.. 4
   Frontal spines long, acute, twice longer than wide at base.
      Trochanters, knees, tips of tibiæ and tarsi, honey-yellow; abdomen with a reddish spot on sides of fourth and fifth segments.................................***A. brasiliensis***, sp. nov.
4. Face below antennæ, sides of pronotum, sides of the fifth abdominal segment and most of the sixth, red; trochanters, knees, tips of tibiæ and the tarsi, honey-yellow; antennæ rather short, black, except the scape at base; scutellum and metanotum sometimes reddish......***A. brevicornis***, sp. nov.
5. Frontal spines indistinct, nearly obsolete.. 6
   Frontal spines distinct..***A. spinifrons*** Walker.
6. Wholly black, except the legs, the knees, tibiæ and tarsi honey-yellow, the middle and hind tibiæ sometimes dusky or fuscous medially; antennæ long, the funicle joints long, contracted medially, each funicle joint with two whorls of long sparse hairs..............................***A. brevicornis***.

AXIMA SPINIFRONS Walker.

Axima spinifrons Walker, Trans. Ent. Soc. London (3), I., 1862, p. 374.—Kirby, Journ. Linn. Soc. Zool., XVII., 1883, pl. 57; Pl. 3, f. 19.—Dalla Torre, Cat. Hym., V., 1898, p. 35.

Brazil: St. Paul.

AXIMA KOEBELEI, sp. nov.

Female.—Length 4.5 mm. Black; scape beneath and basally, tegulæ, trochanters, knees, tips of tibiæ and the tarsi honey-yellow; pronotum, except a median stripe, and spots on sides of the fifth and the sixth abdominal segments, red.

The frontal spines are large, acute, and fully twice as long as wide at base.

Type.—Cat. No. 6394, U. S. N. M.

Brazil: Bonito Prov., Pernambuco. (Mr. Albert Koebele.)

AXIMA BRASILIENSIS, sp. nov.

Female.—Length 4.5 mm. Resembles *A. koebelei*, but differs in color. It is black, with the face below the antennæ, the cheeks, the pronotum except a median stripe, the metathorax at apex and at sides, and the sides of the fourth and fifth abdominal segments, red; trochanters, knees, tips of tibiæ and the tarsi, honey-yellow.

Type.—Cat. No. 6395, U. S. N. M.

Brazil: Bonito Prov., Pernambuco. (Mr. Albert Koebele.)

AXIMA BREVICORNIS, sp. nov.

Female.—Length 4 to 4.6 mm. Black; the face below the insertion of the antennæ, the sides of the pronotum, the prosternum, sometimes the metapleura and the sides of the fifth and sixth abdominal segments, more or less, red; scape at base, tegulæ, trochanters, knees, tibiæ and tarsi, honey-yellow; the tibiæ are sometimes dusky except at tips. Wings hyaline, the veins brown.

The frontal spines are very minute, nearly obsolete, only represented by a carina close to the eye.

Male.—Length 3–4 mm. Black, with the second joint of the trochanters, the front tibiæ, usually entirely, the tips of middle and hind tibiæ, and all tarsi, honey-yellow. The flagellum in this sex is very long, extending to the apex of the abdominal petiole, the joints of the flagellum long, contracted at the middle, each joint of the funicle with two whorls of long hairs. The apex of the metathorax has a quadrate area just above the insertion of the petiole while the petiole is very long, narrowed towards apex, shagreened, and with some longitudinal ridges or carinæ.

Brazil: Chapada, in April; Corumba; Santarem.

Described from two female and five male specimens.

AXIMOPSIS Ashmead, gen. nov.

Allied to *Axima* Walker, but easily separated by the different venation and by the totally different shape of the abdomen. The marginal vein is much shorter than it is in *Axima*, being hardly twice the length of the stigmal vein, while the abdomen is much shorter, never long lanceolate, the relative length of the segments being totally unlike those in *Axima*, with a much shorter petiole. The head, too, is different, not so acutely horned, the lateral ocelli being nearer to the eye margin than to each other; in *Axima* the ocelli are nearer to each other than to the eye margin.

AXIMOPSIS MORIO, sp. nov.

(Plate XXXII., Fig. 6.)

Female.—Length 4.2 mm. Black; the sutures between the femora and tibiæ, the extreme tips of tibiæ and the tarsi honey-yellow. Wings hyaline, bare, the tegulæ black, veins yellowish. The head is wider than the thorax, has a carina extending around the inner orbits, another bounded the scrobes and extending to the clypeus; otherwise it is much as in *Axima*, only not so transverse, the malar space being larger.

TRIBE II. *Isosomini.*

Genus ISOSOMODES Ashmead.

ISOSOMODES BRASILIENSIS, sp. nov.

(Plate XXXIII., Fig. 1.)

Female.—Length 3.5 mm. Black; the scape, pedicel, first joint of funicle, except sometimes at apex, the tegulæ, the trochanters, the tibiæ and the tarsi, honey-yellow. Wings hyaline, the veins brownish-yellow. The abdomen is long, conic-ovate, a little longer than the head and thorax united, subcompressed, smooth and shining, the petiole short, rugose, not or hardly longer than thick.

Brazil: Corumba, in May; Santarem. Five specimens.

ISOSOMODES NIGRICEPS, sp. nov.

(Plate XXXIII., Fig. 2.)

Male.—Length 4.5 mm. Brownish-yellow, the head *above*, the abdominal petiole, a spot at base of second dorsal abdominal segment, a spot at apex of the third and fourth dorsal segments, all the following segments *above*, black; eyes brown, the ocelli red. The head has a deep frontal channel; the antennæ are long, filiform, inserted a little above the middle of the face, the scape reaching beyond the ocelli, the pedicel of same being very short, the funicle joints long, about two thirds the length of the scape, briefly pedicellate and with two whorls of long, black hairs as in *Isosoma*.

Brazil: Santarem. One specimen.

Genus ISOSOMA Walker.

ISOSOMA ORCHIDEARUM Westwood.

Isosoma orchidearum Westwood, Gardener's Chron., 1869, p. 330.—Westwood, Trans. Ent. Soc. London, 1882, p. 323, ♀ ♂; Pl. 13, f. 1. ♂, 4 ♀.—Fitch, Trans. Ent. Soc. London, 1884, Proc., p. xi.—MacLachlan, Trans. Ent. Soc. London. 1884, Proc., p. xiv.—Riley, Insect Life, I., 1898, p. 121.—Riley, Insect Life, II., 1890, pp. 250, 251.—Dalla Torre, Cat. Hym., V., 1898, p. 349.

Brazil: Living in buds of *Cattleya* sp.

This is probably not a true *Isosoma*.

TRIBE III. *Eurytomini.*

Genus CHRYSEIDA Spinola.

CHRYSEIDA AMAZONICA Westwood.

Chryseida amazonica Westwood, Thesaus. Ent. Oxon., 1874. p. 140; pl. 26, f. 5, ♀. —Dalla Torre, Cat. Hym., V., 1898, p. 352.

Brazil.

CHRYSEIDA CYANEA (Fabricius).

Chalcis cyanea Fabricius, Syst. Piez., 1804, p. 164, ♀.

Chryseida cyanea Ashmead, Proc. Ent. Soc. Washington, III., 1895, p. 106, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 352.

Brazil: Chapada. A single female specimen taken in April.

CHRYSEIDA SUPERCILIOSA Spinola.

Chryseida superciliosa Spinola, Mag. de Zool., X., 1840, p. 12. ♀, T. 42.—Rev. Zool., 1840, p. 18.—Westwood, Thesaur. Ent. Oxon., 1874, p. 140.—Dalla Torre, Cat. Hym., V., 1898, p. 352.

British Guiana.

CHRYSEIDA ÆNEIVENTRIS, sp. nov.

(Plate XXXIII., Fig. 3.)

Female.—Length 6 mm. Head and thorax blue, coarsely punctate, the disk of the metathorax, the mesopleura, coxæ, and the punctures along the eyes and on the face, metallic green; flagellum black, the basal two thirds of the scape at least beneath, yellow; third joint of the flagellum fully three and one half times as long as thick, legs rufous, the coxæ metallic greenish, the tarsi yellowish; abdomen æneous or bronzed, the last segment bluish. Wings hyaline, the veins yellowish.

Brazil: Santarem; Chapada, in April.

Genus BEPHRATA Cameron.

BEPHRATA STRIATIPES, sp. nov.

(Plate XXXIII., Fig. 4.)

Female.—Length 6.5 mm. Black, coarsely punctate; the face, except the scrobes, the cheeks, the temples, a large oblong spot on each side of the pronotum, the tegulæ, and the legs, except black stripes on the front and middle femora *above*, and the hind femora which are black, except at tips, are yellow. Wings hyaline, with a fuscous cloud beneath the marginal vein.

The abdomen is much compressed, about as long as the head and thorax united; seen from the side it is nearly as wide as long, the eighth segment represented by an aculeus; the fourth and fifth segments have a band of faint punctures before the middle, the sixth segment is punctured along the base, while the seventh segment is punctured towards the apex.

Brazil: Para, in June. Two specimens.

AXIMOGASTRA Ashmead, gen. nov.

This genus comes nearest to *Bephrata* Cameron, but is easily separated by the totally different shape of the abdomen which is long-lanceolate and compressed, much as in *Axima* Walker, by the first joint of the funicle, although long, being shorter than the scape, and by the venation, which is nearly as in *Isosoma* Walker

AXIMOGASTRA BAHIÆ, sp. nov.

(Plate XXXIII., Fig. 5.)

Female.—Length 5.5 mm. Yellow, umbilicately punctate; a large spot on dorsum of pronotum posteriorly, a stripe on the scutellum, the mesopleura medially, and the metathorax, black. Wings hyaline, the veins yellowish. The long, lanceolate, much compressed abdomen, which is longer than the head and thorax united, is yellow, with some of the dorsal segments marked with black, the last two segments being mostly black.

Type.—Cat. No. 7342 U. S. N. M.

Brazil: Bahia. Collected by Mr. Albert Koebele, March 19, 1883.

PRODECATOMA Ashmead, gen. nov.

This is another singular genus. In its cephalic and thoracic characters it resembles *Decatoma* Spinola, while in venation and in its abdominal characters it is not unlike *Eurytoma* Illiger. Both mandibles are three-dentate, the two outer teeth acute, the inner tooth blunt; the marginal vein is long, slender, the postmarginal being very long, much longer than the marginal, while the stigmal vein, with its knob, is only about half as long as the marginal; the abdomen is compressed, not or hardly longer than the head and thorax united, usually shorter; seen from the side it is broadly oval or short ovate, usually pointed at apex, the petiole being slender and either short or long; the hind tibiæ are fringed with stiff bristles behind as in *Decatoma.*

PRODECATOMA BRUNEIVENTRIS, sp. nov.

Female.—Length 3.5 mm. Head and thorax yellow, immaculate, umbilicately punctate; abdomen brownish; the flagellum and eyes brown black; the ocelli are placed nearly in a straight line and are sometimes encircled with black. The first joint of the flagellum is more than thrice as long as thick, the following imperceptibly shortening to the club. Legs yellow, except the apical half of the hind tibiæ which is fuscous. Wings hyaline, the veins light brown. The abdomen is short, compressed; seen from the side it is oval and hardly longer than the thorax, acutely pointed at apex.

Male.—Length 2.1 mm. Yellow, with the upper part of the head, the thorax above and the abdomen, black; the flagellum is black, the funicle joints long, contracted at the middle, each joint with two whorls of long hairs; legs yellow, with the apex of hind femora and the apical two thirds of hind tibiæ black.

Brazil: Chapada, in April and August; Santarem. Four specimens.

PRODECATOMA FLAVESCENS, sp. nov.

(Plate XXXIII., Fig. 6.)

Female.—Length 1.5 mm. Yellow, the legs much paler, the eyes brown. The first joint of the flagellum is about twice as long as thick, the second about two thirds the length of the first, the third oval, only a little longer than thick. Wings hyaline, the veins yellowish. The abdomen is subcompressed, shorter than the thorax, the petiole longer than thick.

Brazil. One specimen.

PRODECATOMA THORACICA, sp. nov.

Female.—Length 3.1 mm. The upper part of the head, the occiput, dorsum of pronotum, metathorax and the abdomen, except a spot on the sides of the fifth and sixth segments, are black, rest of body yellow, the club of the antennæ, a spot towards apex of the hind femora and the middle of the hind tibiæ being fuscous. Wings hyaline, the veins yellowish. The first joint of the funicle is long, about three and one half times as long as thick, the second a little more than twice as long as thick, the third about twice as long as thick, the following still shorter.

Brazil : Santarem. One specimen.

PRODECATOMA NIGRA, sp. nov.

Female.—Length about 4 mm., the abdomen acutely pointed. Wholly black, except the legs, which are yellow, with the coxæ black, the femora more or less black or brown, except at tips, eyes brown : ocelli red.

Brazil : Santarem.

Genus EURYTOMA Illiger.

EURYTOMA ARGENTATA Cameron.

Eurytoma argentata Cameron, Biol. Centr.-Am. Hym., I., 1884, p. 108.—Dalla Torre, Cat. Hym., V., 1898, p. 334.

Guyana.

EURYTOMA CUCLUS Walker.

Eurytoma cuclus Walker, Monogr. Chalc., II., 1839, p. 62, ♀♂.—Dalla Torre, Cat. Hym., V., 1898, p. 336.

Brazil : Bahia.

EURYTOMA PHILAGER (Walker).

Decatoma philager Walker, Monogr. Chalc., II., p. 81, ♂.

Eurytoma philager Walker, List. Chalc., Brit. Museum, I., 1846, p. 10.—Dalla Torre, Cat. Hym., V., 1898, p. 341.

Chile : Chiloe.

(?) EURYTOMA MELLEA Westwood.

Eurytoma mellea Westwood, Thesaur. ent. Oxon., 1874, p. 139; Pl. 26, f. 2.—Dalla Torre, Cat. Hym., V., 1898, p. 339.

Brazil: Para.

EURYTOMA MENON Walker.

Eurytoma menon Walker, Monogr. Chalc., II., 1839, p. 62, ♀♂.—Dalla Torre, Cat. Hym., V., 1898, p. 339.

Brazil: Bahia.

EURYTOMA POMORUM (Fabricius).

Chalcis pomorum Fabricius, Syst. Piez., 1804, p. 163.

Eurytoma pomorum Westwood, Thesaur. ent. Oxon., 1874, p. 138.—Dalla Torre, Cat. Hym., V., 1898, p. 341.

Brazil.

EURYTOMA PALLIDICEPS Spinola.

Eurytoma pallidiceps Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 467, ♀♂.—Dalla Torre, Cat. Hym., V., 1898, p. 340.

Chile.

EURYTOMA SIMPLEX (Fabricius).

Chalcis simplex Fabricius, Syst. Piez., 1804, p. 164.—Dalla Torre, Cat. Hym., V., 1898, p. 392.

Brazil.

Genus EUDOXINNA Walker.

EUDOXINNA TRANSVERSA Walker.

(Plate XXXIV., Fig. 1.)

Sosxetra transversa Walker, Trans. Ent. Soc. London (3), I., 1862, p. 37, ♀.

Eudoxinna transversa Walker, Trans. Ent. Soc. London (3), II., 1864, p. 207.—Westwood, Thes. ent. Oxon., 1874, p. 138; Pl. 25, f. 9, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 352.

Brazil: Ega; Benevides in July. One female.

In the Herbert H. Smith collection is a single male, taken at Chapada in April, which I think is the male of this species. It measures only 3.2 mm., is yellow with a spot on the vertex enclosing the ocelli, a spot at apex of scutellum, a spot at apex of the hind femora, the apical two thirds of the hind tibiæ, a stripe along the petiole above, and the body of abdomen *above*, black. The antennæ are inserted far up on the face, the scape being long and extending beyond the ocelli, with a minute tooth at apex *beneath*; the flagellum is similar to that in the males of *Isosoma*, each of the funicle joints having two whorls of long hairs. The abdomen is longly petiolated, the petiole being as long as the hind femora, the body being small, triangular in outline, the third segment being the largest segment.

Genus SYSTOLODES Ashmead.

SYSTOLODES BRASILIENSIS, sp. nov.

Female. — Length 1.5 mm. Black, the scape and the legs, except the coxæ and the hind femora, honey-yellow. Wings hyaline, the veins pale yellowish.

The joints of the funicle are a little longer than thick, the first joint being a little the longest. The abdomen is subglobose, subcompressed, the petiole being slender and as large as the hind coxæ.

Brazil: Chapada, in April. One specimen. Differs from all other species placed in this genus by the long abdominal petiole.

TRIBE IV. *Rileyini.*

NEORILEYA Ashmead, gen. nov.

Head transverse, not wider than the thorax at its widest part, the eyes large, broadly oval or subrotund, the malar space very short; mandibles short, broad, 4-dentate; antennæ thirteen-jointed, with two ring-joints, alike in both sexes, the flagellum being stout, filiform, pubescent, stoutest in the female, the pedicel shorter than the first joint of the funicle; first two joints of the funicle in the male are submoniliform. Thorax robust, the pronotum very large, subquadrate, as wide as the mesonotum or very nearly, the latter being a little the longer, with the parapsidal furrows usually vaguely defined, rarely sharply defined or complete; the metathorax is extremely short. Abdomen short oval, shorter than the thorax, depressed, wider than deep, subsessile, the petiole very short, the first and third body segments the longest, nearly equal, the second very short, the fourth and the fifth longer than the second, the following more or less retracted.

In sculpture this genus agrees with *Eurytoma*, being umbilicately punctate.

NEORILEYA FLAVIPES, sp. nov.

(Plate XXXVI., Fig. 2.)

Female.—Length 2.3–2.6 mm. Robust, black, umbilicately punctate, the abdomen oval, slightly depressed and delicately shagreened; scape and legs pale yellowish, rarely with the hind femora and tibiæ toward apex blackish, or dusky; flagellum filiform, the funicle joints two to six quadrate. Wings hyaline, the tegulæ and veins yellowish or brownish-yellow. The male is usually smaller, with the abdomen more depressed, the pedicel as well as the scape being yellow; otherwise it is hardly distinguishable from the female.

Brazil: Chapada; Santarem. Ten specimens.

Genus RILEYA Ashmead.

RILEYA ORBITALIS, sp. nov.

Female.—Length 2 mm. Head and thorax, except the pronotum which is more or less brownish or yellowish, mostly black, the abdomen brown, the apex black; orbits, face below antennæ, scape, tegulæ, and the legs, except the basal half of the hind femora, yellow or brownish-yellow, the tips of the tibiæ and the tarsi paler or yellowish-white; flagellum subclavate, light brown, joints five and six of funicle wider than long. Wings hyaline, the veins pale yellowish; the marginal vein is a little more than twice the length of the stigmal, the postmarginal vein being long,

The abdomen is conic-ovate, cylindrical, nearly twice the length of the thorax, pointed at apex, the third segment very large, occupying the greater part of the whole surface of abdomen.

Brazil: Santarem.

FAMILY LXIV. PERILAMPIDÆ.

Genus PERILAMPUS Latreille.

PERILAMPUS BRASILIENSIS, sp. nov.

(Plate XXXIV., Fig. 4.)

Female.— Length 4.8–5 mm. Blue, the head behind the ocelli, the fore part of the middle mesothoracicl obe, and the inner front angle of the lateral lobes æneous; the head is smooth with several longitudinal striæ between the eyes and the scrobes, the pronotum coarsely, irregularly punctate, the middle mesothoracic lobe and the scutellum coarsely transversely striate, the lateral mesothoracic lobes with some long, oblique striæ posteriorly. The extreme tips of the tibiæ and the tarsi are testaceous.

Brazil: Chapada, in April. Two specimens.

FAMILY LXV. EUCHARIDÆ.

Genus EUCHARIS Latreille.

EUCHARIS DICERODERA Spinola? = *Kapala.*

Eucharis dicerodera Spinola, Mem. Acad. Sc. Torino (2), XIII., 1851, p. 43, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 360.

Brazil.

Genus ORASEMA Cameron.

ORASEMA FESTIVA (Fabricius).

Eucharis festiva Fabricius, Syst. Piez., 1804, p. 157.

Orasema festiva Kirby, Journ. Linn. Soc. London, Zool., XX., 1886, p. 29.— Dalla Torre, Cat. Hym., V., 1898, p. 361.

Brazil.

ORASEMA RAPO (Walker).

(Plate XXXIV., Fig. 5.)

Eucharis rapo Walker, Monogr. Chalc., II., 1839, p. 66, ♀.

Orasema rapo Kirby, Journ. Linn. Soc. London, Zool., XX., 1886, p. 26. — Dalla Torre, Cat. Hym., V., 1898, p. 361.

Brazil: Chapada, in April; Santarem; Corumba, in May. Fifteen specimens.

PSEUDOCHALCURA Ashmead, gen. nov.

This genus resembles *Chalcura* Kirby, but the wings are hyaline, *without* a fuscous spot, and the antennæ, in the male, have only *four* branches.

PSEUDOCHALCURA NIGROCYANEA, sp. nov.

(Plate XXXIV., Fig. 6.)

Male.— Length 3.5 mm. Blue-black, coarsely, reticulately punctate, with a faint æneous tinge above, the trochanters, apices of femora and all tibæ and tarsi, and the scape and pedicel of antennæ honey-yellow, the flagellum brown-black or brown, paler towards apex, joints one to four each with a long branch above. The abdomen is æneous black, with a very long petiole, the length of the hind femora, the body subcompressed, viewed from the side subtriangular.

Female. — Length about 4 mm. Agrees fairly well with the male except that the flagellum is brown, joints one to four acutely lobed above, while the abdomen is larger, the petiole much shorter, being hardly two thirds the length of the hind femora.

Brazil: Chapada, in April. Six specimens.

Genus STIBULA Spinola.

STIBULA NIGRICEPS, sp. nov.

(Plate XXXV., Fig. 2.)

Male.— Length 3 mm. Brownish-yellow, the head, except the eyes which are brown, being entirely black; the flagellum from the second joint is brown-black, the scape, pedicel, and the first joint of the flagellum being yellow; the first joint of the flagellum is very long, more than twice as long as the scape.

The thorax is brownish-yellow marked with black as follows: The middle mesothoracic lobe has two oblong, nearly confluent, spots anteriorly, the lateral lobes have a spot above, while the scutellum has a transverse line across the base and a central line ending on the two spines at the apex of the scutellum, black. The abdominal petiole and the legs are yellow.

Brazil: Santarem, in April. One specimen.

Genus SCHIZASPIDEA Westwood.

SCHIZASPIDEA MACULATA Westwood.

Schizaspidea? maculata Westwood, Thesaur. ent. Oxon., 1874, p. 153, ♀; Pl. 28, f. 1.

Orasema maculata Kirby, Journ. Linn. Soc. London, Zool., XX., 1886, p. 29.—Dalla Torre, Cat. Hym., V., 1898, p. 361.

Brazil.

SCHIZASPIDEA PRETENDENS Walker.

Schizaspidea pretendens Walker, Trans. Ent. Soc. London (3), I., 1862, p. 385, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 364.

Brazil: Chapada, in May. One specimen, badly damaged.

Genus TETRAMELIA Kirby.

TETRAMELIA MERIDIONALIS Kirby.

Tetramelia meridionalis Kirby, Ann. and Mag. Nat. Hist. (6), IV., 1889, p. 144, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 364.

Brazil.

TETRAMELIA PLAGIATA (Walker).

(Plate XXXV, Fig. 1.)

Schizaspidia plagiata Walker, Trans. Ent. Soc. London (3), I., 1862, p. 385, ♂.—Westwood, Thesaur. ent. Oxon., 1874, p. 152; Pl. 28, f. 11.

Tetramelia plagiata Kirby, Journ. Linn. Soc. London, Zool., XX., 1886, p. 31.—Dalla Torre, Cat. Hym., V., 1898, p. 364.

Brazil: Chapada, in November. One male specimen.

Genus THORACANTHA Latreille.

THORACANTHA LATREILLEI Guérin.

Thoracantha latreillei Guér. Iconogr. Régn. an. Ins., VII., 1829–44, p. 415; Pl. LXVII., f. 8.—Blanchard, Hist. nat. Ins., III., 1840, p. 257.—Walker, Ann. & Mag. Nat. Hist., XII., 1843, p. 45, ♀.—Kirby, Journ. Linn. Soc. London Zool., XX., 1886, p. 32.—Dalla Torre, Cat. Hym., X., 1898, p. 365.

Thoracantha coleopteroides (Waterhouse) Westwood, Trans. Ent. Soc. London, II., 1839, p. 196.

Galearia violacea Brullé, Hist. nat. Ins., Hym., IV., 1846, p. 572.

Thoracantha apta Walker, Trans. Ent. Soc. London (3), I., 1862, p. 384, ♂.— Westwood, Thesaur. ent. Oxon., 1874, p. 153; Pl. 28, f. 3.

Acrostela apta Shepp, The Entom., XXVI., 1894, p. 188.— Dalla Torre, Cat. Hym., V., 1898, p. 366.

Brazil: Santarem and Villa Nova; Chapada, in March, April and November; Santarem. Twelve male and two female specimens.

THORACANTHA ROMANDII Guérin.

Thoracantha romandii Guérin, Iconogr. Règne anim., VII., Ins., 1845, p. 415.— Dalla Torre, Cat. Hym., V., 1898, p. 366.

Colombia.

Genus UROMELIA Kerby.

UROMELIA STRIATA (Perty).

Thoracantha striata Perty, Delect. anim. artic. Brasil, 1833, p. 134; T. 28, f. 15 and 16. — Blanchard, Hist. nat. Ins., III., 1840, p. 257.

Uromelia striata Kirby, Journ. Linn. Soc. London, Zool., XX., 1886, p. 37. — Dalla Torre, Cat. Hym., V., 1898, p. 367.

Thoracantha flabellatus Westwood, Proc. Soc. London, III., 1835, p. 52, ♂.

Thoracantha aculeata Westwood, *opus cit.*, 1835, ♀.

Chalcis (*Thoracantha*) *aculeata* Blanchard, Cuvier: Règne anim., Ed. 3ª, Ins., II. 1849; T. 113, f. 8.

Thoracantha aculeata Westwood, Thesaur. ent. Oxon., 1874, p. 154; Pl. 28, f. 9.

Lasionychus flabellatus Shipp, The Entom., XXV., 1894, p. 188. — Dalla Torre, Cat. Hym., V., 1898, p. 367.

Brazil: Santarem. Five specimens.

Genus DICŒLOTHORAX Ashmead.

Allied to *Lætocantha* Shipp, but easily distinguished by the deep impressions on the mesonotum and the scutellum, and by the very broad and different shape of the scutellar processes, which form a broad shield over the abdomen.

DICŒLOTHORAX PLATYCERUS, sp. nov.

(Plate XXXV., Fig. 3.)

Female. — Length 3.8 mm. Æneous black, the antennæ, the legs, except the coxæ and a median longitudinal stripe on the closely united scutellar projections, testaceous. The disk of the mesonotum and the scutellum are concavely excavated, the bottom of the concavities being smooth and highly polished, the scutellar processes being longitudinally striated. The pronotum is greatly elevated and coarsely transversely striated. The head is coarsely shagreened, with some irregular elevated lines. The antennæ are short, the first joint being very long, clavate, about the length of the scape, or nearly as long as all remaining joints united, the second funicle joint only a little longer than thick, the following transverse.

The male differs from the female only slightly in the antennæ. The first joint of the flagellum is a little shorter about the length of the flagellum, the funicle joints two to four being much wider, subdentate *above*.

Brazil: Santarem. Two specimens.

Genus DILOCANTHA Shipp.

DILOCANTHA FLAVICORNIS (Walker).

Thoracantha flavicornis Walker, Trans. Ent. Soc. London (3), I., 1862, p. 382.—Westwood, Thesaur. ent. Oxon., 1874, p. 153; Pl. 28, f. 3.

Dilocantha flavicornis Shipp, The Entom., XXVII., 1894, p. 184.—Dalla Torre, Cat. Hym., V., 1898, p. 366.

Brazil: Villa Nova (Bates).

Genus ISOMERALIA Shipp.

ISOMERALIA CORONATA (Westwood).

Thoracantha coronata Westwood, Thesaur. ent. Oxon., 1874, p. 154; Pl. 28, f. 10.

Isomeralia coronata Shipp., The Entom., XXVII., 1894, p. 188.—Dalla Torre, Cat. Hym., V., 1898, p. 366.

Brazil: Bonito Provence, Pernambuco (Albert Koebele).

Genus LIRATA Cameron.

LIRATA BATESELLA (Westwood).

Thoracantha batesella Westwood, Thesaur. ent. Oxon., 1874, p. 154; Pl. 28, f. 8, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 365.

Brazil: Santarem. One male specimen.

LIRATA PALLESCENS (Walker).

Thoracantha pallescens Walker, Trans. Ent. Soc. London (3), I., 1862, p. 380, ♂.

Lirata pallens Shipp, The Entom., XXVII., 1894, p. 188.—Dalla Torre, Cat. Hym., V., 1898, p. 367.

Brazil: Villa Nova (Bates); Chapada, in March and November. Four specimens, two males.

The female has not been described. It may be easily recognized by the difference in the antennæ; the first joint of the funicle is very long, as long or a little longer than the scape, or nearly as long as all the remaining joints united, acute at apex above, joints two to four of funicle short but also acute at apex above.

LIRATA SURGENS (Walker).

Thoracantha surgens Walker, Trans. Ent. Soc. London (3), 1., 1862, p. 384, ♂.

Lirata surgens Shipp, The Entom., XXVII., 1894, p. 188.—Dalla Torre, Cat. Hym., V., 1898, p. 367.

Brazil: Santarem.

Genus KAPALA Cameron.

KAPALA ALTA (Walker).

Thoracantha alta Walker, Trans. Ent. Soc. London (3), I., 1862, p. 383, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 365.

Brazil.

KAPALA ANCHURA (Walker).

Thoracantha anchurus Walker, List Chalc. Brit. Mus., I., 1846, p. 88.—Dalla Torre, Cat. Hym., 1898, p. 365.

Brazil.

KAPALA FURCATA (Fabricius).

Eucharis furcata Fabricius, Syst. Piez., 1804, p. 158, ♀.—Latreille, Gen. Crust. et Ins., III., 1807, p. 21.—Lamarck, Hist. nat. anim. s. vert., IV., 1817, p. 160.—Lamarck, *opus cit.*, Ed. 2ª, IV., 1835, p. 370.—Walker, Monogr. Chalc., II., 1839, p. 65.

Eucharis flabellatus Fabricius, Syst. Piez., 1804, p. 158, ♂.

Thoracantha furcata Walker, The Entom., I., 1841; Pl. 9, f. 2.

Chirocerus furcatus Brullé, Hist. nat. Ins. Hym., IV., 1846, p. 571; T. 38, f. 5.—Lucas, La Sagra's Hist. fis., etc., Cuba., VII., 1856, p. 762.—Desmarest, Chenu. Encycl. hist. nat. Annelles, 1860, p. 161; fig. 141.

Schizaspidia furcata Walker, Notes on Chalc., Pt. 4, 1871, p. 66, f. 2.—Walker, The Entom., VI., 1872, p. 88, fig.

Kapala furcata Cameron, Biol. Centr.-Am. Hym., I., 1884, p. 103; Pl. 5, f. 15.—Dalla Torre, Cat. Hym., V., 1898, p. 365.

Brazil: Chapada, in May and April; Santarem. Six female and four male specimens.

When in Berlin in the winter of 1889–90, I saw specimens of this species bearing MS. names: *Thoracantha elevata* Westw., *T. spinosa* Illiger, etc.

KAPALA INEXAGENS (Walker).

Thoracantha inexagens Walker, Trans. Ent. Soc. London (3), I., 1862, p. 381, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 365.

Brazil: Santarem (Bates); Chapada, in May. One specimen.

I am inclined to think this species is only a variety of *K. furcata* Fabr.

KAPALA ATRATA (Walker).

Thoracantha atrata Walker, Trans. Ent. Soc., London (3), I., 1862, p. 383, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 365.

Brazil.

KAPALA CYNIPSEA (Walker).

Thoracantha cynipsea Walker, Trans. Ent. Soc. London (3), I., 1869, p. 379, ♀♂.—Dalla Torre, Cat. Hym., V., 1898, p. 365.

Brazil: Santarem, Villa Nova.

KAPALA DICERODERA (Spinola).

Eucharis dicerodera Spinola, Mem. accad. sc. Torino (2), XIII., 1851, p. 43, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 360.

Brazil: Para.

KAPALA REFLEXA (Walker).

Thoracantha reflexa Walker, Trans. Ent. Soc. London (3), I., 1862, p. 382, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 366.

Brazil: Santarem (Mr. Bates).

KAPALA ROMANDII (Guérin).

Thoracantha romandii Guér. Iconogr. règn. anim., VIII., Ins., 1845, p. 415.—Dalla Torre, Cat. Hym., V., 1898, p. 366.

Colombia.

KAPALA STRIATISSIMA (Walker).

Thoracantha striatissima Walker, Trans. Ent. Soc. London (3), I., 1862, p. 380, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 366.

Brazil: Santarem (Mr. Bates).

KAPALA SPLENDENS sp. nov.

(Plate XXXV., Fig. 4.)

Female.—Length 8–8.5 mm. Very robust, the head and thorax brilliant metallic green, the abdomen blue or blue green, with æneous reflections, usually brassy above, the antennæ and the legs except the coxæ, yellowish, the wings subfuscous, the veins brown. The face is longitudinally striate, the striæ becoming transverse below the insertion of the antennæ, the thorax coarsely transversely striate, the scutellum and the scutellar processes longitudinally striate.

Brazil: Chapada, in April and November. Four specimens.

This is the largest and most brilliant of any Eucharid yet discovered.

Genus LASIOKAPALA Ashmead.

Allied to *Kapala* Cameron, but easily distinguished by being hairy or pubescent, and by the smoothness of the head. The lateral lobes of the mesonotum and the scutellum, including the long processes, are also smooth, not striate; the scutellar processes are transversely striate or serrate at their apices.

LASIOKAPALA SERRATA, sp. nov.

(Plate XXXV., Fig. 5.)

Female.—Length 3.5 mm. Æneous black; the antennæ, the long scutellar processes and the legs are honey-yellow. The head in front is smooth without striæ; the thorax is hairy or pubescent, perfectly smooth, except the middle mesothoracic lobe above which is coarsely, transversely striate; the middle lobe and the scutellum have a deep depression on their disks; while the long scutellar processes are smooth to near their apices, their apices or tips above are laterally transversely striate or serrate.

Brazil: Chapada.

FAMILY LXV. MISCOGASTERIDÆ.

SUBFAMILY I. PIRENINÆ.

Genus HERBERTIA Howard.

HERBERTIA HOWARDI, sp. nov.

(Plate XXXV., Fig. 6.)

Female.—Length 2.4 mm. Blue black, the thorax above with a slight æneous tinge; eyes very large, brown, pubescent; scape honey-yellow, the flagellum brown-black; tibiæ and tarsi pale yellow. The head and thorax above are shagreened or feebly punctate, pubescent; the mesopleuron has a broad, rather deep sulcus; the wings are hyaline, the veins brownish, the stigmal vein very small, the marginal vein very long, while the postmarginal vein is also long. The abdomen is ovate, a little longer than the thorax, the first body segment being the longest and occupying nearly the half of the whole surface, the following segments very short, subequal in length.

Brazil: Rio de Janeiro in August. One specimen.

HERBERTIA BRASILIENSIS, sp. nov.

Female.—Length 1.6 mm. Head and thorax bluish, the abdomen æneous black; ocelli reddish-yellow; eyes large, hairy; flagellum brown-black; tibiæ and tarsi yellowish-white. The head and the thorax are only feebly shagreened, the lateral mesothoracic lobes being almost smooth; the wings are hyaline, the veins as in *H. howardi* except paler in color. The abdomen is ovate, pointed at apex, on account of the sheaths of the ovipositor projecting slightly, but not longer than the thorax.

Brazil: Chapada, in April.

SUBFAMILY II. TRIDYMINÆ.

TRIBE I. *Tridymini.*

Genus GASTRANCISTRUS Westwood.

GASTRANCISTRUS CEPHALON Walker.

Gastrancistrus cephalon Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 30, ♀. — Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 461, ♀. — Dalla Torre, Cat. Hym., V., 1898, p. 203.

Chile: Conception (C. Darwin).

GASTRANCISTRUS FULGINAS Walker.

Gastrancistrus fulginas Walker, Monogr. Chalc., II., 1839, p. 85, ♀. — Dalla Torre Cat. Hym., V., 1898, p. 203.

Chile: Chiloe.

GASTRANCISTRUS POLLES Walker.

Gastrancistrus polles Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 186, ♀. — Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 460, ♀. — Dalla Torre, Cat. Hym., V., 1898, p. 204.

Chile: Coquimbo (C. Darwin).

GASTRANCISTRUS VONONES Walker.

Gastrancistrus vonones Walker, Monogr. Chalcid., II., 1839, p. 67, ♂ — Dalla Torre, Cat. Hym., V., 1898, p. 205.

Brazil: Bahia.

Genus ÆPOCERUS Mayr.

ÆPOCERUS EMARGINATUS Mayr.

Æpocerus emarginatus Mayer, Verh. zool.-bot. Gesell. Wien., XXXV., 1885, p. 244, ♀. — Dalla Torre, Cat. Hym., V., 1898, p. 315.

Brazil: St. Catharina (Dr. Fritz Müller).

ÆPOCERUS EXCAVATUS Mayr.

Æpocerus excavatus Mayr., Verh. zool.-bot. Gesell. Wien., XXXV., 1885, p. 243, ♀♂. — Dalla Torre, Cat. Hym., V., 1898, p. 315.

Brazil: St. Catharina (Dr. Fritz Müller).

ÆPOCERUS FLAVOMACULATUS Mayr.

Æpocerus flavomaculatus Mayr, Verh. zool.-bot. Gesell. Wien., XXXV., 1885, p. 244, ♂. — Dalla Torre, Cat. Hym., V., 1898, p. 316.

Brazil: St. Catharina (Dr. Fritz Müller).

ÆPOCERUS INFLATICEPS Mayr.

Æpocerus inflaticeps Mayr, Verh. zool.-bot. Gesell. Wien., XXXV., 1885, p. 245; T. 16, f. 45.— Dalla Torre, Cat. Hym., V., 1898, p. 316.

Brazil: St. Catharina (Dr. Fritz Müller).

ÆPOCERUS PUNCTIPENNIS Mayr.

Æpocerus punctipennis Mayr, Verh. zool.-bot. Gesell. Wien., XXXV., 1885, p. 245, ♂.— Dalla Torre, Cat. Hym., V., 1898, p. 245.

Brazil: St. Catharina (Dr. Fritz Müller).

ÆPOCERUS SIMPLEX Mayr.

Æpocerus simplex Mayr, Verh. zool.-bot. Gesell. Wien., XXXV., 1885, p. 244, ♀. — Dalla Torre, Cat. Hym., V., 1898, p. 316.

Brazil: St. Catharina (Dr. Fritz Müller).

TRIBE II. *Metastenini.*

Genus LYRCUS Walker.

LYRCUS ORIGO Walker.

Lyrcus origo Walker, Ann. & Mag. Nat. Hist., X., 1842, p. 114, ♀.— Dalla Torre, Cat. Hym., V., 1898, p. 415.

Chile: Valparaiso (C. Darwin).

SUBFAMILY III. MISCOGASTERINÆ.

TRIBE I. *Halticopterini.*

Genus HALTICOPTERA Spinola.

HALTICOPTERA CLEODORA (Walker).

Pachylarthrus cleodora Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 116, ♂.

Halticoptera cleodora Dalla Torre, Cat. Hym., V., 1898, p. 197.

Peru: Lima (C. Darwin).

HALTICOPTERA HERSE (Walker).

Pachylarthrus herse Walker, Monogr. Chalc., II., 1839, p. 82, ♂.

Halticoptera herse Dalla Torre, Cat. Hym., V., 1898, p. 198.

Chile: Chiloe.

HALTICOPTERA SARIASTER (Walker).

Pachylarthrus sariaster Walker, Ann. & Mag. Nat. Hist., X., 1842, p. 271, ♀♂.

Halticoptera sariaster Dalla Torre, Cat. Hym., V., 1898, p. 199.

Chile: Valdivia (C. Darwin).

Genus DICYLUS Walker.

DICYLUS ARDUINE Walker.

Dicylus arduine Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 115, ♀.—Dalla Torre, Cat. Hym., V. 1898, p. 200.

Peru: Lima (C. Darwin).

DICYLUS LYNASTES Walker.

Dicylus lynastes Walker, Ann. & Mag. Nat. Hist.. X., 1842, p. 271, ♀.—Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 457.—Dalla Torre, Cat. Hym., V., 1898, p. 200.

Chile: Valdivia (C. Darwin).

TRIBE II. *Miscogasterini.*

Genus LAMPROTATUS Westwood.

LAMPROTATUS ALCANDER Walker.

Lamprotatus alcander Walker, Ann. & Mag. Nat. Hist., XII., 1843, p. 30, ♂.—Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 452, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 187.

Chile.

LAMPROTATUS BISALTES Walker.

Lamprotatus bisaltes Walker, Ann. & Mag. Nat. Hist., X., 1842, p. 272, ♂.—Spinola Gay's Hist. fis. Chile, Zool., VI., 1851, p. 455, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 187.

Chile: Valdivia (C. Darwin).

LAMPROTATUS CÆCINA Walker.

Lamprotatus cæcina Walker, Ann. & Mag. Nat. Hist., X., 1842, p. 114, ♀.—Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 452, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 187.

Chile: Valparaiso (C. Darwin).

LAMPROTATUS DIOXIPPES (Walker).

Miscogaster dioxippes Walker, Monogr. Chalc., II., 1839, p. 67, ♀.

Lamprotatus dioxippes Walker, List Chalc. Brit. Museum, I., 1846, p. 33.—Dalla Torre, Cat. Hym., V., 1898, p. 189.

Brazil: Bahia.

LAMPROTATUS CLEUS Walker.

Miscogaster cleus Walker, Monogr. Chalc., II., 1839, p. 85, ♀.

Lamprotatus cleus Walker, List Chalc. Brit. Museum, I., 1846, p. 33.—Dalla Torre, Cat. Hym., V., 1898, p. 189.

Chile: Chiloe.

LAMPROTATUS HAGES Walker.

Miscogaster hages Walker, Monogr. Chalc., II., 1839, p. 83, ♂.

Lamprotatus hages Walker, List Chalc. Brit. Museum, I., 1846, p. 33.—Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 451, ♂.—Dalla Torre, Cat. Hym, V., 1898, p. 189.

Chile: Chiloe.

LAMPROTATUS NÆVOLUS Walker.

Lamprotatus? nævolus Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 185, ♂.—Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 456, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 191.

Chile: Coquimbo (C. Darwin).

LAMPROTATUS NATTA Walker.

Lamprotatus natta Walker, Ann. & Mag. Nat. Hist., X., 1842, p. 271, ♂.—Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 455, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 191.

Chile: Valdivia (C. Darwin).

LAMPROTATUS NUMITUS Walker.

Lamprotatus numitus Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 184, ♂.—Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 453, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 191.

Chile: Isle Chonos (C. Darwin).

LAMPROTATUS OROBIA Walker.

Lamprotatus orobia Walker, Ann. & Mag. Nat. Hist., X., 1842, p. 272, ♀.—Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 454, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 191.

Chile: Valdivia (C. Darwin).

LAMPROTATUS TUBERO Walker.

Lamprotatus tubero Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 185, ♀.—Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 450, ♀.—Dalla Torre, Cat. Hym., V:, 1898, p. 193.

Chile: Coquimbo (C. Darwin).

Genus SELADERMA Walker.

SELADERMA EPULO Walker.

Seladerma epulo Walker, Monogr. Chalc., II., 1839, p. 86, ♀.—Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 449, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 194.

Chile: Chiloe.

Genus MISCOGASTER Walker.

MISCOGASTER APHAREUS Walker.

Miscogaster aphareus Walker, Monogr. Chalc., II., 1839, p. 83, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 195.

Chile: Chiloe.

MISCOGASTER NICETAS Walker.

Miscogaster nicetas Walker, Monogr. Chalc., II., 1839, p. 84, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 195.

Chile: Chiloe.

MISCOGASTER TYCHE Walker.

Miscogaster tyche Walker, Monogr. Chalc., II., 1839, p. 84, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 198.

Chile: Chiloe.

SUBFAMILY IV. LELAPINÆ.

Genus LELAPS HALIDAY.

LELAPS AVICULA Haliday.

Lelaps avicula Haliday, Trans. Ent. Soc. London, III., 1843, p. 300, ♂.

Lælaps avicula Dalla Torre, Cat. Hym., V., 1898, p. 184.

Brazil.

LELAPS CALLISTO (Marshall).

Lælaps callisto Marshall, Ann. soc. ent. France, LXI., 1892, p. 73; Pl. 4, f. 3.—Dalla Torre, Cat. Hym., V., 1898, p. 184.

Venezuela.

LELAPS DECORATA Walker.

Lelaps decorata Walker, Trans. Ent. Soc. London (3), I., 1862, p. 390, ♀.

Lælaps decorata Dalla Torre, Cat. Hym., V., 1898, p. 184.

Brazil: Ega.

LELAPS PICTA Walker.

Lelaps picta Walker, Trans. Ent. Soc. London (3), I., 1862, p. 390, ♀.

Lælaps picta Dalla Torre, Cat. Hym., V., 1898, p. 184.

Brazil: Ega.

LELAPS APICALIS sp. nov.

Female.—Length 4 mm. Head, thorax and abdomen pale ferruginous, the base of the abdomen and the stylus black; scape, pedicel and antennal club pale yellowish, the funicle black; legs, including coxæ, flavo-testaceous. Wings hyaline, with a curved fuscous streak at basal third, a large fuscous spot beyond this, including the disk, connected with the basal nervure and extending to the hind margin; there is a large hyaline spot beneath the marginal vein and the apex of the stigmal vein; another triangular hyaline spot at the hind margin, while the apex of the wing is also hyaline. The head and thorax are opaquely punctate, without striæ; the abdomen is conic-ovate, smooth and polished and terminates in a black, subcompressed stylus. The antennæ are subclavate, not long, the flagellum being only about twice the length of the scape, the last three joints of the funicle a little wider than long.

Brazil: Chapada, in August.

LELAPS AFFINIS, sp. nov.

Female.—Length 4 mm. Head, thorax and abdomen, except the tip of the stylus which is black, pale ferruginous; scape, pedicel, first three joints of funicle, the last joint of funicle, and the club, pale yellowish or whitish; legs, including the coxæ, flavo-testaceous, the coxæ and tarsi however tinged with white. Front wings hyaline, with a fuscous band across from the base of the marginal vein and enclosing the basal part of the stigmal vein; this is followed by a hyaline transverse band and then by another narrow transverse fuscous band; the apex of the wing is hyaline. The head and thorax are finely opaquely sculptured; the face above the insertion of the antennæ is finely, transversely aciculate, but smooth near the eye margin; the axillæ are finely longitudinally aciculate. The abdomen is shaped as in *L. apicalis.*

Brazil: Santarem.

LELAPS FERRUGINEA, sp. nov.

Female. — Length 3.6–4 mm. Head, thorax and abdomen, pale ferruginous, the extreme tip of the stylus black; antennæ pale yellowish with the two last joints of the funicle and the club black; the funicle, without the pedicel, is fully three times as long as the scape; legs, including the coxæ, pale flavo-testaceous, the coxæ and the tarsi tinged with whitish, the hind tibiæ fuscous or subfuscous. Front wings mostly fuscous, the base and tips hyaline and with two wedge-shaped hyaline spots *vis-à-vis* across the disk, just beyond the stigmal vein, their points meeting. The head and thorax are sculptured as in *L. affinis* except that the axillæ are not longitudinally aciculate and the posterior half of the mesopleura is perfectly smooth and highly polished.

Brazil: Santarem. Two specimens.

LELAPS ÆNEICEPS, sp. nov.

Female. — Length 3.5–4 mm. Head æneous black, the thorax and the abdomen ferruginous, the middle lobe of the scutellum basally, a band across the middle of the abdomen and the tip of the stylus, black; face striate; antennæ pale yellowish, with the last four or five joints of the funicle black; the flagellum is long, fully three times as long as the scape, the joints long, the last joint of the funicle only a little longer than thick, but the shortest joint; legs pale yellowish, the coxæ and tarsi whitish, the middle femora sometimes dusky or subfuscous basally. The front wings are hyaline, with the apex fuscous; there is also a faint fuscous streak across from the origin of the marginal vein. The abdomen is conic-ovate, produced into a rather long stylus at apex; the stylus is compressed towards apex and about as long as the large second segment, the second segment blackish or fuscous at apex.

Brazil: Chapada and Santarem.

LELAPS HALIDAYI, sp. nov.

Female. — Length 10.5 mm. Head and thorax æneous black, with a faint purplish tinge in certain lights; face coarsely striate; pronotum transversely striate, the striæ coarser on the collar; mesonotum anteriorly delicately transversely striate, the lobes posteriorly roughly punctured; scutellum striate; metanotum rugulose, bifoveolate at base. The antennæ are long, black, the scape metallic black but more or less testaceous beneath; the flagellum is about thrice as long as the scape, subclavate, pubescent, the joints elongate. The legs are testaceous, the front and hind coxæ and trochanters, base of middle tibiæ and the tarsi basally are yellowish-white, the front tibiæ at apex and the hind tibiæ at apical two thirds are fuscous. The abdomen is rufous and terminates in a long stylus, the sheaths of the ovipositor being black. The front wings are hyaline, with a large triangular fuscous spot on the disk, a large oval fuscous spot at apex and a small fuscous spot at the origin of the marginal vein.

Brazil: Rio de Janeiro, in October.

Dedicated to the memory of A. H. Haliday, Esq., the describer of the genus, and who did so much to advance the knowledge of the parasitic Hymenoptera.

LELAPS ABDOMINALIS, sp. nov.

(Plate XXXVI, Fig. 1.)

Female.— Length 8.5 mm. Head and pronotum dark blue, the rest of the thorax black or æneous black; abdomen red, with the extreme apex black; scape and pedicel of the antennæ and the legs pale testaceous, the tips of the coxæ, sutures of trochanters, knees and tarsi basally, more or less whitish, the tips of the middle and hind tibiæ fuscous. The front wings are very similar to those in *L. halidayi*, only the fuscous spot at the apex extends all across the wing and leaving a whitish band between it and the apex of the stigmal vein. The face, pronotum and scutellum are coarsely striate.

Brazil: P. Branca, in April.

LELAPS BIMACULATA, sp. nov.

Female.— Length 3–4 mm. Head and thorax æneous black, the thorax above more or less bronzy green, the abdomen polished black; scape, pedicel, basal two or three joints of the flagellum and most of the legs pale yellowish, the coxæ basally and the femora, especially the front and hind femora, æneous black or brown, the tips of the coxæ, base of tibiæ and the tarsi basally, whitish. The front wings are hyaline, with a fuscous spot at apex and another beneath and including the stigmal vein. The abdomen, with its long stylus, is longer than the head and thorax united, the stylus alone being about two thirds the length of the body of the abdomen. The head is shining, with the face delicately longitudinally striate; the thorax is sculptured, the base of the mesonotum, the axillæ and the apex of the scutellum being striate. The antennæ are long, the flagellum being subclavate and more than three times the length of the scape, the funicle joints all longer than thick, the basal joints the longest.

Brazil: Chapada, in April; Santarem; and P. Branca.

LELAPS STYLATA, sp. nov.

Female.— Length 5.5–6 mm. Head and thorax æneous black, the thorax above sometimes bronzed green, the abdomen polished black, ending in a long stylus, which is as long as or a little longer than the body of the abdomen; scape, base of flagellum and sometimes the tip, and most of the legs, except as noted, pale yellowish, the front and middle coxæ basally, and the front femora, brown or black, the hind femora, except basally and at tips, subfuscous, the tips of hind tibiæ dusky, the hind coxæ, trochanters, all tibiæ more or less and especially basally, and all tarsi basally, more or less white or tinged with white; the stylus is sometimes testaceous basally or with only the apex black, more rarely wholly black.

Brazil: Chapada, in April; Santarem.

FAMILY LXVII. CLEONYMIDÆ.

SUBFAMILY I. CHALCEDECTINÆ.

Genus CHALCEDECTES Walker.

CHALCEDECTES HISTRIONICA (Westwood).

Polychroma histrionica Westwood, Thesaur. ent. Oxon., 1874, p. 141; Pl. 26, f. 6.
Polychromatium histrionicum Dalla Torre, Cat. Hym., V., 1898, p. 186.
Brazil: Santarem. Two specimens.

CHALCEDECTES MACULICORNIS Walker.

Chalcedectes maculicornis Walker, Ann. & Mag. Nat. Hist. (2), X., 1853, p. 47, ♀.
Chalcodectes maculicornis Dalla Torre, Cat. Hym., V., 1898, p. 186.
Brazil: Para; Santarem. Two specimens.

CHALCEDECTES REGALIS (Westwood).

Polychroma regalis Westwood, Thesaur. ent. Oxon., 1874, p. 141; Pl. 26, f. 7.
Polychromatium regale Dalla Torre, Cat. Hym., V., 1898, p. 186.
Brazil: Amazon (Bates).

CHALCEDECTES SEDECIMDENDATUS (Westwood).

Polychroma sedecimdentata Westwood, Thesaur. ent. Oxon., 1874, p. 141.
Polychromatium sedecimdentatum Dalla Torre, Cat. Hym., V., 1898, p. 186.
Brazil.

CHALCEDECTES SEPTEMDENTATUS (Westwood).

Polychroma septemdentata Westwood, Thesaur. ent. Oxon., 1874, p. 142.
Polychromatium septemdentatum Dalla Torre, Cat. Hym., V., 1898, p. 186.
Brazil: Para (Bates).

CHALCEDECTES ANNULIPES, sp. nov.

(Plate XXXVI., Fig. 2.)

Female. — Length about 7 mm. Metallic purplish and green, with cupreous tingings, a more decided green spot on the anterior middle of the pronotum and on the disk of the scutellum, the legs metallic greenish and æneous, the hind coxæ more bluish posteriorly, the three basal joints of the tarsi and a broad band on the hind tibiæ at base, white, the terminal joints of tarsi brown or brown black. The wings are hyaline, the veins light brown, the subcostal vein yellowish towards apex. The swollen hind femora are armed with about thirteen or fourteen minute teeth. The abdomen is conic-ovate, a little longer than the head and thorax united, depressed.

Brazil: Chapada, in January; Corumba, in May.

SUBFAMILY II. CLEONYMINÆ.

Genus LYCISCA Spinola.

LYCISCA APICALIS Walker.

Lycisca apicalis Walker, Trans. Ent. Soc. London (3), I., 1862, p. 393, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 231.

Brazil: Ega (Bates); Santarem. Three specimens.

LYCISCA HASTATA Walker.

Lycisca hastata Walker, Trans. Ent. Soc. London (3), I., 1862, p. 393, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 231.

Brazil: Ega (Bates).

LYCISCA IGNICAUDA Westwood.

(Plate XXXVI., Fig. 3.)

Lycisca ignicauda Westwood, Thesaur. ent. Oxon., 1874, p. 148; Pl. 27, f. 10.—Dalla Torre, Cat. Hym., V., 1898, p. 231.

Brazil: Para (Bates); Santarem; Chapada, in November; Corumba, in April. Eight specimens.

LYCISCA MACULIPENNIS (Philippi).

Proglochin maculipennis Philippi, Stettin. ent. Zeitg., XXXII., 1871, p. 289; Pl. 3, f. 3, 3^a.

Lycisca maculipennis Westwood, Thesaur. ent. Oxon., 1874, p. 149.—Dalla Torre, Cat. Hym., V., 1898, p. 231.

Chile: Valdivia, near Los Ulmos.

LYCISCA RAPTORIA Spinola.

Lycisca raptoria Spinola, Rev. Zool., 1840, p. 18.—Spinola, Mag. de Zool., X., 1840, p. 18, ♀; Pl. 43.—Spinola, Mem. accad. sc. Torino (2), XIII., 1851, p. 44, ♀.—Westwood, Thesaur. ent. Oxon., 1874, p. 148.—Dalla Torre, Cat. Hym., V., 1898, p. 231.

Brazil: Cayenne.

LYCISCA ROMANDII Westwood.

Lycisca romandii Westwood, Magas. de Zool., XI., 1841, p. 84; Pl. 84.—Guérin, Iconogr. règn. anim., VII., 1845, p. 416.—Westwood, Thesaur. ent. Oxon., 1874, p. 148.—Dalla Torre, Cat. Hym., V., 1898, p. 230.

Brazil: Cayenne.

LYCISCA WESTWOODII Guérin.

Lycisca westwoodii Guérin, Iconogr. règn. anim., VII., Ins., 1845, p. 416.—Dalla Torre, Cat. Hym., V., 1898, p. 231.

Colombia.

Genus CLEONYMUS Latreille.

CLEONYMUS COLLARIS Spinola.

Cleonymus collaris Spinola, Mém. accad. sc. Torino (2), XIII., 1853, p. 46, ♀.— Dalla Torre, Cat. Hym., V., 1898, p. 182.

Brazil: Para.

Genus TRIGONODERUS Westwood.

TRIGONODERUS BRASILIENSIS, sp. nov.

(Plate XXXVI., Fig. 4.)

Female. — Length 4 mm. Bronzed green, the face in front, the thorax at the sides and beneath, and the coxæ bluish-green; abdomen elongate, conically pointed, much longer than the head and thorax united, blue-black, with a metallic æneous tinge at base; scape, pedical, tegulæ and legs, except as noted, honey-yellow, the hind femora dusky; flagellum brown-black. Wings hyaline, the veins yellowish.

Brazil: Chapada, in April. One specimen.

Genus EPISTENIA Westwood.

EPISTENIA ÆQUALIS Walker.

Epistenia æqualis Walker, Trans. Ent. Soc. London (3), I., 1862, p. 392, ♀.— Dalla Torre, Cat. Hym., V., 1898, p. 177.

Brazil: San Paulo.

EPISTENIA ANIA Walker.

Epistenia ania Walker, List Chalc. Brit. Museum, I., 1846, p. 93, ♀.— Dalla Torre, Cat. Hym., V., 1898, p. 177.

Brazil.

EPISTENIA BASALIS Walker.

(Plate XXXV., Fig. 5.)

Epistenia basalis Walker, Trans. Ent. Soc. London (3), I., 1862, p. 397, ♀.— Dalla Torre, Cat. Hym., V., 1898, p. 177.

Brazil: Tapagos (Bates); Santarem. Two specimens.

EPISTENIA QUADRIPLAGIATA Walker.

Epistenia quadriplagiata Walker, Notes on Chalc., Pt. 5, 1872, p. 85, ♀.— Dalla Torre, Cat. Hym., V., 1898, p. 178.

Brazil.

EPISTENIA SCUTATA Walker.

Epistenia scutata Walker, Trans. Ent. Soc. London (3), I., 1862. p. 391. ♀.— Dalla Torre, Cat. Hym., V., 1898, p. 178.

Brazil.

SUBFAMILY III. PELECINELLINÆ.

Genus PELECINELLA Westwood.

PELECINELLA HOWARDII Ashmead.

(Plate XXXVI., Fig. 6.)

Pelecinella howardii Ashmead, Proc. Ent. Soc. Washington, III., 1895, p. 233, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 178.

Brazil: Chapada, in November. Two specimens.

PELECINELLA PHANTASMA Westwood.

Pelecinella phantasma Westwood, Trans. Ent. Soc. London, 1868, p. xxxv.— Westwood, Thesaur. ent. Oxon., 1874, p. 142; Pl. 26, f. 8.—Ashmead, Proc. Ent. Soc. Washington, III., 1895, p. 233, ♀.

Brazil: Amazon (Bates).

PELECINELLA WESTWOODII Ashmead.

Pelecinella westwoodii Ashmead, Proc. Ent. Soc. Washington, III., 1895, p. 233, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 178.

Brazil: Chapada, in March; P. Branca, in April. Two specimens.

FAMILY LXVII. ENCYRTIDÆ.

SUBFAMILY I. EUPELMINÆ.

TRIBE I. *Eupelmini.*

Genera OODERELLA Ashmead.

OODERELLA SMITHII Ashmead.

(Plate XXXVII., Fig. 1.)

Ooderella smithii Ashmead, Proc. Ent. Soc. Washington, IV., 1896, p. 11, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 268.

Brazil: Chapada, in April. One specimen.

Genus BRASEMA Cameron.

BRASEMA FUSCIPENNIS, sp. nov.

Female. — Length 7 mm. Uniformly dark blue, closely punctate, the mesopleura and the coxæ clothed with a white pubescence. Wings fuscous, a little paler at tips. Head very broad, lenticular, without antennal furrows; eyes brown, faintly hairy; ocelli red, arranged in a triangle; mandibles small, 3-dentate at apex; legs concolorous with the body, the sutures of the trochanters yellowish, the tibiæ subdilated towards apex, the hind tibiæ subcompressed, ending in two short spurs, the middle tibiæ ending in one strong spur, the middle tarsi dilated with joints one to four armed with two rows of black teeth beneath.

Brazil: Santarem. One specimen.

Genus IDOLEUPELMUS Ashmead.

IDOLEUPELMUS ANNULICORNIS Ashmead.

Idoleupelmus annulicornis Ashmead, Proc. Ent. Soc. Washington, IV., 1896, p. 13, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 271.

Brazil: Santarem. West Indies: St. Vincent.

Genus MACREUPELMUS Ashmead.

MACREUPELMUS BRASILIENSIS Ashmead.

(Plate XXXVII., Fig. 2.)

Macreupelmus brasiliensis Ashmead, Proc. Ent. Soc. Washington, IV., 1896, p. 14, ♀.— Dalla Torre, Cat. Hym., V., 1898, p. 271.

Brazil: Santarem. Four specimens.

Genus ISCHNOPSIS Ashmead.

ISCHNOPSIS THORACICA sp. nov.

Female.— Length 3.5 mm. Head metallic green, finely punctate, the face with a fine, glittering white pubescence; eyes black; antennæ, thorax, legs and abdomen honey-yellow. The abdomen is longer than the head and thorax united, and tinged with fuscous towards apex, the ovipositor short, but distinct.

Brazil: Santarem. One specimen.

ISCHNOPSIS CYANEA sp. nov..

Female. — Length 3.5 mm. Uniformly dark blue, the thorax with a greenish tinge in certain lights, closely finely punctate, and clothed with short, scale-like, white hairs; the tibial spurs and the tarsi, except toward apex, yellowish-white, the basal joints always white; eyes large, converging above, brown and faintly pubescent. Wings hyaline, veins light brown.

Brazil: Santarem.

Genus EUPELMUS Dalman.

EUPELMUS AMERICANUS Spinola.

Eupelmus ? americanus Spinola, Mem. accad. sc. Torino (2), XIII., 1851, p. 47.— Dalla Torre, Cat. Hym., V., 1898, p. 273.

Brazil: Para.

EUPELMUS AMILLARUS Walker.

Eupelmus amillarus Walker, Ent. Mag., V., 1838, p. 475, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 273.

Brazil.

EUPELMUS BASICUPREUS Walker.

Eupelmus basicupreus Walker, Ann. & Mag. Nat. Hist. (2), X., 1852, p. 45, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 274.

Brazil: Para.

EUPELMUS EXCELLENS Westwood.

Eupelmus excellens Westwood, Thesaur. ent. Oxon., 1874, p. 149.—Dalla Torre, Cat. Hym., V., 1898, p. 276.

Brazil: Para (Bates).

EUPELMUS KOEBELEI, sp. nov.

Female.—Length 2.6 mm. Apterous and of a bluish-green color, the head in front gold-green, the abdomen blue-black, with an æneous tinge, cupreous at base and beneath, the ovipositor yellowish, with a black annulus at base and at tip; the ovipositor is hardly one third the length of the abdomen; the pronotum is bluish, with a tuft of long black hairs on the anterior middle above; legs æneous black, the sutures of the trochanters, tips of all tibiæ, a spot at base of middle tibiæ, and all tarsi, except the last joint, brownish-yellow or yellowish-white.

Type.—Cat. No. 7660, U. S. N. M.

Brazil: Bonito Prov., Pernambuco, February, 1883 (Mr. Albert Koebele).

EUPELMUS ACAUDUS, sp. nov.

Female.—Length 2 mm. Metallic green, the head on the vertex and the mesopleura blue-green; scape, pedicel and legs, including the coxæ, pale honey-yellow; flagellum brown-black. The wings are hyaline, with the veins yellowish. The abdomen conic-ovate, as long as the head and thorax united, æneous black, the ovipositor not prominent, the sheaths yellowish and only slightly projecting beyond the tip of the abdomen.

Brazil: Santarem. One specimen.

EUPELMUS PROXIMUS, sp. nov.

Female.—Length 1.6 mm. Æneous black, the head in front metallic green; scape æneous black, the pedicel at apex and beneath yellowish, the flagellum black; legs, except coxæ which are metallic, brownish-yellow, the front femora toward apex faintly dusky. The wings are hyaline, the veins yellowish. The abdomen is elongate, conically pointed, æneous black, longer than the head and thorax united, the ovipositor not prominent, the sheaths yellowish and only slightly projecting.

Brazil: Chapada, in April. One specimen.

EUPELMUS COMPRESSIVENTRIS, sp. nov.

Female.—Length 3 mm.; ovipositor about one third the length of the abdomen and broadly ringed with yellow. Head and thorax blue, with a faint greenish tinge in certain lights, the mesopleura decidedly æneous; abdomen compressed, æneous black; antennæ, except the club, and the legs, except the coxæ basally, brownish-yellow, the hind femora faintly dusky medially.

Brazil: Corumba, in March. One specimen.

EUPELMUS APRILIS, sp. nov.

Female.—Length 2 mm.; ovipositor short but distinct, the length of the basal joint of hind tarsi, testaceous. Head and thorax metallic green; antennæ black, the scape æneous black; legs except the femora, the hind coxæ, a spot at base of the front tibiæ outwardly, straw-yellow. The wings are hyaline, the veins yellowish. The abdomen is elongate, conically pointed, longer than the head and thorax united and æneous black.

Brazil: Chapada, in April. One specimen.

EUPELMUS CHAPADÆ, sp. nov.

Female.—Length 2.8 mm.; ovipositor projecting, not ringed with yellow, but with the tip brownish. Head, thorax and abdomen metallic green, the mesopleura with a purplish tinge; antennæ except a narrow annulus at the apex of the pedicel, wholly back; legs, except the front and hind coxæ, pale ferruginous or brownish-yellow. The wings are hyaline, the veins yellowish. The abdomen is conically pointed, longer than the head and the thorax united.

Brazil: Chapada, in April. One specimen.

EUPELMUS SANTAREMENSIS, sp. nov.

Female.—Length 3.5 mm.; ovipositor about one third the length of the abdomen, ringed with yellow. Head and thorax blue or bluish-green, the head in front and the mesonotal ridges metallic-green; scape and an annulus at the apex of the pedicel, yellow; legs, except the front and the hind coxæ and more or less of their femora which are metallic blue or blue-green, pale ferruginous or brownish-yellow.

Brazil: Santarem.

EUPELMUS PERSIMILIS, sp. nov.

Female.—Length 4 mm.; ovipositor prominent, broadly ringed with yellowish-white. This species is allied to *E. santaremensis*, but it is slightly larger, the lateral ridges of the mesonotum, the elevated basal part of the middle lobe and the scutellum are more decidedly gold-green; the disk of the mesopleura is greener; the antennæ, except the club, are wholly yellow; while the legs, except the coxæ and a streak on the hind femora, are pale ferruginous, the apex of the hind tibiæ and their tarsi being white.

Brazil : Corumba, in May. One specimen.

EUPELMUS CORUMBÆ, sp. nov.

Female.—Length 2.5 mm.; ovipositor short, not ringed with white. Bluish-green, the anterior part of the middle mesothoracic lobe and the mesopleura posteriorly more decidedly green ; antennæ, except the scape beneath, black ; legs metallic brown, the coxæ blue-green, the trochanters, knees and base and tips of tibiæ, yellowish, the tibial spurs and the tarsi, except the last two joints, white or yellowish-white. Wings hyaline, the veins yellowish.

Brazil : Corumba, in May. One specimen.

EUPELMUS UNIFASCIATUS, sp. nov.

Female.—Length 3.8 mm.; ovipositor prominent, more than one third the length of the abdomen, yellowish basally, brownish towards tip but with the extreme tip yellowish. Blue, with a glittering white pubescence; prothorax and the lateral lobes of the mesonotum gold-green ; antennæ black, the scape subcompressed, metallic æneous, legs æneous or bronzed, the sutures of the trochanters and the knees testaceous, the middle and hind tarsi basally whitish. Wings subfuscous, hyaline at base and with a narrow transverse band from before the origin of the stigmal vein.

Brazil : Chapada, in August. One specimen.

EUPELMUS SIMILLIMUS, sp. nov.

Female.— Length 2 mm. ; ovipositor prominent, with a broad yellowish band. Metallic green ; head above smooth, æneous black ; palpi white ; front wings with the apical two thirds fuscous, the fuscous part with two oblique white spots, *vis-à-vis*, one extending from the front margin just before the stigmal vein, the other just opposite it on the hind margin, as in the West Indian *E. albomaculatus ;* legs metallic brownish, the apices of the coxæ, the trochanters, the front and middle femora beneath, and the rest of the legs, except the base of the front and middle tibiæ outwardly, white or whitish.

Brazil : Chapada, in April. One specimen.

EUPELMUS MAGNICLAVATUS, sp. nov.

Female.— Length 4.5 mm. ; ovipositor short, only about two thirds the length the basal joint of hind tarsi, and yellowish-white. Blue, closely, finely punctate, the mesonotal depression greenish ; wings hyaline, with a fuscous cloud extending from the tip of the stigmal vein into the discoidal region, then curving backwards and connected with a faint cloud that extends from the base of the marginal vein; antennæ æneous black, ending in a large stout club which is nearly as long as the scape, the last four joints of the funicle being much wider than long; legs æneous black, the trochanters, or at least along the sutures, yellowish.

Brazil: Santarem. One specimen.

Genus PHLEBOPENES Perty.

PHLEBOPENES BASILICA (Marshall).

Prionopelma basilica Marshall, Ann. soc. ent. France, XLI., 1892, p. 71; Pl. 4, f. 2.
Phlebopenes basilica Dalla Torre, Cat. Hym., V., 1898, p. 279.

Venezuela: San Esteban.

PHLEBOPENES CONSORS (Walker).

Prionopelma consors Walker, Trans. Ent. Soc. London (3), I., 1862, p. 395, ♀.
Phlebopenes consors Dalla Torre, Cat. Hym., V., 1898, p. 279.

Colombia: New Grenada.

PHLEBOPENES LONGICAUDATA (Westwood).

Prionopelma longicaudata Westwood, Thesaur. ent. Oxon., 1874, p. 145, ♀; Pl. 27, f. 4.
Phlebopenes longicaudata Dalla Torre, Cat. Hym., V., 1898, p. 279.

Brazil: Para (Bates).

PHLEBOPENES LONGICOLLIS Westwood.

Prionopelma longicollis Westwood, Thesaur. ent. Oxon., 1874, p. 145; T. 27, f. 1.
Phlebopenes longicollis Dalla Torre, Cat. Hym., V., 1898, p. 279.

Brazil: Para (Bates); Chapada. One specimen.

PHLEBOPENES LONGIFICA (Walker).

Prionopelma longifica Walker, Notes on Chalc., Pt. 5, 1872, p. 84, ♀.
Phlebopenes longifica Dalla Torre, Cat. Hym., V., 1898, p. 297.

Brazil: Para (Bates); Santarem. One specimen.

PHLEBOPENES PURPUREA (Walker).

Prionopelma purpurea Walker, Trans. Ent. Soc. London (3), I., 1862, p. 395, ♀.
Phlebopenes purpurea Dalla Torre, Cat. Hym., V., 1898, p. 279.

Brazil: Tapayos and Ega (Bates).

PHLEBOPENES SPLENDENS (Walker).

Prionopelma splendens Walker, Trans. Ent. Soc. London (3), I., 1862, p. 396, ♂.
Phlebopenes splendens Dalla Torre, Cat. Hym., V., 1898, p. 279.

Brazil: Villa Nova (Bates).

PHLEBOPENES SPLENDIDUS Perty.

Phlebopenes splendidus Perty, Delectus. anim. Artic. Brasil., 1833, p. 132; T. 26, f. 11.—Dalla Torre, Cat. Hym., V., 1898, p. 279.

Brazil.

PHLEBOPENES VIRIDIS (Westwood).

Prionopelma viridis Westwood, Proc. Zool. Soc. London, III., 1835, p. 51.—Westwood, Thesaur. ent. Oxon., 1874, p. 144.

Phlebopenes viridis Dalla Torre, Cat. Hym., V., 1898, p. 279.

Brazil.

PHLEBOPENES ABDOMINALIS, sp. nov.

Female.—Length to tip of abdomen 8.5–9 mm.; ovipositor about 25 or 26 mm. long. Head and thorax blue, with faint greenish tingings in certain lights; antennæ black, the scape subcompressed, æneous black; legs, except the coxæ, and abdomen pale ferruginous, the long ovipositor being black. Wings hyaline, the veins brownish.

Brazil: Rio de Janeiro, in November. One specimen.

PHLEBOPENES PERTYI, sp. nov.

(Plate XXXVII., Fig. 3.)

Female.—Length to tip of abdomen about 9 mm.; ovipositor about 27 mm. long. Head and thorax blue, the ridges of the mesonotum tinged with æneous; antennæ black; the prosternum, the legs, including all coxæ, and the abdomen pale ferruginous, the abdomen of a darker red.

Brazil: Santarem. One specimen.

This species resembles *P. abdominalis*, but is easily separated by the color of the coxæ.

ENCYRTASPIS Ashmead, gen. nov.

This genus is at once recognized by the tuft of long black hairs on the scutellum as in the genus *Encyrtus* Latreille (= *Comys* Förster), by the shape of the head, the scrobes being very short, hardly impressed, and by the abdomen, which has the hypopygium prominent and ends in a long ovipositor.

ENCYRTASPIS BRASILIENSIS, sp. nov.

(Plate XXXVII., Fig. 4.)

Female.—Length about 4 mm.; ovipositor longer than the body, with a broad white band before the apex. Blue with greenish reflections, the head in front æneous, the abdomen æneous black, with a testaceous band near the base, the scutellum red with a tuft of long black hairs. The antennæ, except the last two or three joints of the funicle and the club which are black or dark fuscous, are yellowish; the legs are brownish or fuscous, the trochanters yellowish, the hind tibiæ compressed, the hind margin of same being white; joints one to three of the middle tarsi and joints two and three and apex of joint one of the hind tarsi white. The front wings, except the basal one third and the apical one fourth, fuscous, the base and apex hyaline.

Type.—Cat. No. 7661, U. S. N. M.

Brazil: Pernambuco. (Mr. Albert Koebele.)

Genus ANASTATUS Motschulsky.

TABLE OF SPECIES.

1. Thorax and abdomen mostly metallic blue or green.................... 2
  Thorax and abdomen honey-yellow, or for the greater part.
    Thorax honey-yellow; head gold-green, closely punctate; front wings subfuscous, the basal third a transverse band before the apex and two triangular spots, *vis-à-vis*, beneath the marginal vein, hyaline or white.................... *A. auriceps*, sp. nov.
    Thorax yellowish but with the middle mesothoracic lobe and the metanotum bluish-green; head metallic green, closely punctate; front wings fuscous, with a band at base, and another across from the base of the stigmal vein, hyaline.................... *A. coreophagus*, sp. nov.
2. Metallic blue-green or bluish.................... 3
  Metallic green, the disk of the mesonotum purplish, the mesopleura posteriorly, the ridge in front of the tegulæ, and a band at base of the abdomen honey-yellow; front wings subfuscous, the basal third and a transverse band across from the marginal vein, hyaline or white........ *A. pleuralis*, sp. nov.
3. Collar and base of abdomen *not* yellow.................... 4
  Collar and base of abdomen yellow or whitish.
    Head gold-green; front wings fuscous with the basal third, and a band across from before the stigmal vein, hyaline.................... *A. basalis*, sp. nov.
4. Abdomen finely punctate or shagreened, with a yellowish band at base; front wings fuscous, paler at tips, the basal third hyaline, the disk with a narrow transverse band from the apex of the marginal vein.................... *A. punctiventris*, sp. nov.
  Abdomen smooth, æneous black; front wings fuscous, the basal third, and a transverse band across the disk before the origin of the stigmal vein, hyaline.................... *A. unifasciatus*, sp. nov.

ANASTATUS AURICEPS, sp. nov.

Female.—Length 2.5–3 mm. Head metallic gold-green, punctate, the thorax, abdomen, legs and antennæ, except the club, honey-yellow, the palpi white.

The thorax and abdomen are smooth, impunctate; the metathorax has a metallic band at base, enclosing the spiracles and on the dorsum of the abdomen laterally are a few fuscous spots. The antennæ, except the club, are yellow, the flagellum subclavate, twice the length of the scape. The front wings are subfuscous, with the basal third, a transverse band before apex, and two triangular spots *vis-à-vis* beneath the marginal vein, hyaline or whitish.

Brazil: Corumba, lowlands in March; Chapada, in April. The specimen from Chapada is the smaller, but agrees well with the other, except the flagellum is fuscous from the third joint and there is a bluish-green spot on the disk of the mesonotum.

ANASTATUS COREOPHAGUS, sp. nov.

Female.— Length 2.4 mm. Head gold-green, closely punctate; thorax, except the middle mesothoracic lobe and the metanotum, which are bluish-green, and the abdomen yellowish or honey-yellow; antennæ, except the scape, pedicel and first two or three joints of the funicle, which are yellowish or yellowish-white, black or brown-black; legs yellowish, the tarsi, except the last joint, paler. Front wings, except at base and a transverse band across from the base of the stigmal vein, fuscous, at base and the band hyaline or whitish.

Type.—Cat. No. 7664, U. S. N. M.

Brazil: Pernambuco. Bred June 12, 1883, by Mr. Albert Koebele, from the eggs on an unknown coreid.

ANASTATUS PLEURALIS, sp. nov.

Female.— Length 2.6 mm. Metallic green, the disk of the mesonotum and the mesopleura anteriorly purplish or bluish-green; the scape, the ridge in front of the tegulæ, the tegulæ, the mesopleura posteriorly, a broad band at base of abdomen, and the legs, except as noted, honey-yellow; the front femora above faintly, a narrow stripe on the middle femora above, the hind femora and tibiæ above, and the basal joint of hind tarsi, are brown or fuscous; the middle coxæ basally and the hind coxæ are metallic. Front wings subfuscous, the basal third and a band across the disk from the middle of the marginal vein, hyaline or whitish.

Brazil: Chapada, in April. One specimen.

ANASTATUS BASALIS, sp. nov.

Female.— Length 4.2 mm. Blue-green; the prothorax, scape and legs, yellowish or pale ferruginous, the middle tibiæ and the hind femora and tibiæ more or less brown or fuscous, the tarsi whitish; abdomen æneous black, with a broad whitish band at base. Front wings with the apical two thirds, except a narrow whitish band across from the marginal vein, fuscous, the basal third hyaline.

Brazil: Chapada, in August. One specimen.

ANASTATUS PUNCTIVENTRIS, sp. nov.

Female.—Length 4 mm. Metallic blue-green, more decidedly green on the disk of the mesonotum anteriorly and on the vertex; the whole body, including the abdomen, is closely punctate. The scape, pedicel, first three or four joints of the flagellum, and a band at the base of the abdomen, are honey-yellow; legs brownish or fuscous, the front trochanters, a spot on the knees, a stripe on the middle tibiæ *beneath* and the hind femora beneath, yellowish. The front wings, except the basal third and a narrow transverse band on the disk from near the apex of the marginal vein, are fuscous, the basal third and the narrow transverse band being hyaline or whitish.

Type.—Cat. No. 7662, U. S. N. M.

Brazil: Chapada; Bahia (Mr. A. Koebele).

This is the only species known in this genus with a punctate abdomen. The specimens from Bahia were bred in March, 1883, by Mr. Albert Koebele, from the eggs of an unknown locustid.

ANASTATUS UNIFASCIATUS, sp. nov.

Female.—Length about 3 mm. Dark blue-green, the vertex and disk of the mesonotum more decidedly green; scape yellow, the flagellum, including the pedicel, brown-black, the club with a whitish spot on the oblique truncature; legs dark brown or fuscous, the front and middle tarsi and joints two to four of hind tarsi *beneath*, yellowish-white. Wings much as in *A. basalis*.

Brazil: Rio de Janeiro.

TRIBE II. *Tanaostigmini.*

TRICHENCYRTUS Ashmead, gen. nov.

This genus is allied to *Tanaostigmodes* Ashmead, and resembles it in shape, but the body is not bare, as in that genus, but clothed with short, scale-like, white hairs. It is also easily separated by the difference in the antennæ, the scape being subcompressed, the funicle joints one to three being wider than long. In *Tanaostigmodes* the funicle joints are cylindrical and longer than wide.

TRICHENCYRTUS ROBUSTUS, sp. nov.

(Plate XXXVII., Fig. 5.)

Female.—Length 2 mm. Robust, æneous black, with metallic bluish reflections in certain lights, the whole body clothed with short, scale-like white hairs, the head with a white band across the lower part of the face and extending on to the cheeks back of the eyes; there is also another slender white line above this, on each side; extending from the insertion of each antenna to the eye margin; the very short pronotum has a triangular white spot on each side; the front tarsi, or at least more or less beneath, and the short sheaths of the ovipositor, are testaceous. The scape of the antennæ is flat, dilated, æneous black, the flagellum dull black, pubescent, the basal joints wider than long. The wings are hyaline, the costal cell broad, the veins light brown, the stigmal vein long, ending in a small knob, the postmarginal much shorter than the stigmal.

Brazil: Chapada, in April. One specimen

SUBFAMILY II. ENCYRTINÆ.

TRIBE III. *Mirini.*

Genus PARENCYRTUS Ashmead.

PARENCYRTUS BRASILIENSIS, sp. nov.

(Plate XXXVII., Fig. 6.)

Parencyrtus brasiliensis Ashmead, Proc. U. S. Nat. Museum, XXII., 1900, p. 368, ♀.

Brazil: Chapada.

Genus ÆNASIUS Walker.

ÆNASIUS CHAPADÆ Ashmead.

(Plate XXXVIII., Fig. 1.)

Ænasius chapadæ Ashmead, Proc. U. S. Nat. Museum, XXII., 1900, p. 371, ♀.

Brazil: Chapada.

Genus BOTHRIOTHORAX Ratzeburg.

BOTHRIOTHORAX BRASILIENSIS, sp. nov.

Male.—Length 1.8 mm. Æneous black, the head and thorax with close, thimble-like punctures, sparser on the scutellum; the antennæ are brownish-yellow the first four joints of the flagellum slightly emarginate at apex, with long hairs; the legs are æneous black, the front femora toward apex, the apex of the middle femora, front and middle tibiæ and tarsi, and the hind tarsi, yellowish. Wings hyaline, the veins light brownish, the postmarginal vein only slightly developed. The abdomen in outline is triangular; shorter than the thorax, depressed and æneous.

Brazil: Chapada, in September. One specimen.

Genus HEMENCYRTUS Ashmead.

HEMENCYRTUS HERBERTII Ashmead.

(Plate XXXVIII., Fig. 2.)

Hemencyrtus herbertii Ashmead, Proc. U. S. Nat. Museum, XXII., 1900, p. 375, ♀.

Brazil: Chapada, in August and November.

Genus HEXACLADIA Ashmead.

HEXACLADIA SMITHII Ashmead.

Hexacladia smithii Ashmead, Ins. Life, III., 1891, p. 456, ♀♂.—Dalla Torre, Cat. Hym., V., 1898, p. 230.—Ashmead, Proc. U. S. Nat. Museum, XXII., 1900, p. 377.

Brazil: Chapada, in April.

Genus APHIDENCYRTUS Ashmead.

APHIDENCYRTUS EPYTUS (Walker).

Encyrtus epytus Walker, Monogr. Chalcid., II., 1839, p. 69, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 258.

Brazil: Bahia.

APHIDENCYRTUS BRASILIENSIS, sp. nov.

Male.—Length 0.8 mm. Æneous black, nearly smooth, the abdomen triangular with a metallic luster; antennæ brownish-yellow, the joints of the funicle oval, with long hairs; legs, except the coxæ and the femora, honey yellow, the coxæ black, the femora brown. Wings hyaline, the veins brown, the stigmal vein about twice as long as the marginal.

Brazil: Chapada, in April. One specimen.

Genus COCCIDENCYRTUS Ashmead.

(?) COCCIDENCYRTUS VITIS Guérin.

Encyrtus vitis Guérin, Iconogr. règne anim., VII., Ins., 1845, p. 416, ♂; T. 67, f. 14.—Dalla Torre, Cat. Hym., V., 1898, p. 265.

Brazil.

SUBFAMILY III. SIGNIPHORINÆ.

Genus SIGNIPHORA Ashmead.

SIGNIPHORA NOACKI Ashmead.

Signiphora noacki Ashmead, Proc. U. S. Nat. Museum, XXII., 1900, p. 410, ♀.

Brazil: San Paulo.

Type.—Cat. No. 4793, U. S. N. M.

SIGNIPHORA RHIZOCOCCI Ashmead.

Signiphora rhizococci Ashmead, Proc. U. S. Nat. Museum, XXII., 1900, p. 411, ♀.

Brazil: Minas Geras.

Type.—Cat. No. 4858, U. S. N. M.

FAMILY LXIX. PTEROMALIDÆ.

SUBFAMILY I. PTEROMALINÆ.

TRIBE I. *Metaponini.*

Genus METOPON Walker.

METOPON BRASILIENSE, sp. nov.

Female.—Length 2 mm. Metallic bronze-green, the head and thorax closely punctate, the abdomen with a brassy tinge, except the flagellum, the antennæ, and legs, except the coxæ, honey yellow, the flagellum strongly clavate, pale brown, the joints after the second wider than long, the last funicle joint being more than three times as wide as long. The metathorax is almost smooth with a delicate median carina which is forked on the produced neck; no transverse fold on the metanotum. Wings hyaline, the veins yellowish. Abdomen ovate, not longer than the thorax, subcompressed beneath towards apex.

Male.—Length 2.5 mm. Agrees with female in color but easily recognized by the antennæ, the flagellum being long, filiform, the joints of the funicle being briefly pedicellate, with moderately long hairs.

Brazil: Corumba, in May; Santarem. One male and three female specimens.

METOPON MAGNICLAVATUM, sp. nov.

Female.—Length 3 mm. Bronzed black, with a purplish tinge, the head and thorax closely punctate, the abdomen conically pointed, longer than the head and thorax united, æneous black; the scape, pedicel and legs, except coxæ, honey yellow, the flagellum black, the club greatly enlarged and as long as the pedicel and funicle joints united.

Brazil: Santarem. One specimen.

Quite different from all other species known by the greatly enlarged antennal, club and by the conically produced abdomen.

ACANTHOMETOPON Ashmead, gen. nov.

Allied to *Metopon* Walker, but easily separated by the spined scutellum and by the flagellum having only *two* ring-joints.

ACANTHOMETOPON CLAVICORNE, sp. nov.

(Plate XXXVIII., Fig. 3.)

Female.—Length 3.8 mm. Bronzed green, closely punctate, the first six joints of the antennæ and the legs honey yellow, the rest of the antennæ black or brown-black. Abdomen compressed, the ventral valve prominent; *above* it has a brassy tinge, *beneath* towards apex and the ventral valve yellow.

Brazil: Corumba, in May. One specimen.

TRIBE III. *Eutelini.*

Genus PLAYTERMA Walker.

PLAYTERMA NEPHELE Walker.

Platyterma nephele Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 186, ♂.

Chile: Coquimbo.

TRIBE IV. *Pteromalini.*

Genus PAPHAGUS Walker.

PAPHAGUS SIDERO Walker.

Paphagus sidero Walker, Ann. & Mag. Nat. Hist., XII., 1843, p. 48, ♀. — Dalla Torre, Cat. Hym., V., 1898, p. 213.

West Indies: St. Vincent.

Genus PTEROMALUS Swederus.

Very few of the hundreds of species described by Francis Walker in this genus belong to it. The types must be studied before his species can be placed in their proper genera.

PTEROMALUS ARCHIA Walker.

Pteromalus archia Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 116, ♂. — Dalla Torre, Cat. Hym., V., 1898, p. 111.

Peru: Lima.

PTEROMALUS CALENUS Walker.

Pteromalus calenus Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 31, ♂. — Spinola, Gay's Hist. fis. Chile, Zool., VI., 1851, p. 445, ♂. — Dalla Torre, Cat. Hym., V., 1898, p. 115.

Chile: Conception.

PTEROMALUS CLEOPHANES Walker.

Pteromalus cleophanes Walker, Monogr. Chalc., II., 1839, p. 68, ♀. — Dalla Torre, Cat. Hym., V., 1898, p. 117.

Brazil: Bahia.

PTEROMALUS COSIS Walker.

Pteromalus cosis Walker, Monogr. Chalc., II., 1839, p. 68, ♀. — Dalla Torre, Cat. Hym., V., 1898, p. 119.

Brazil: Bahia.

PTEROMALUS DRIOPIDES Walker.

Pteromalus driopides Walker, Monogr. Chalc., II., 1839, p. 68, ♀. — Dalla Torre, Cat. Hym., V., 1898, p. 122.

Brazil: Bahia.

PTEROMALUS EURYPON Walker.

Pteromalus eurypon Walker, Ann. & Mag. Nat. Hist., XIX., 1847, p. 398, ♀. — Dalla Torre, Cat. Hym., V., p. 124.

PTEROMALUS GRYNEUS Walker.

Pteromalus gryneus Walker, Ann. & Mag. Nat. Hist., X., 1842, p. 115, ♀. — Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 442, ♀. — Dalla Torre, Cat. Hym., V., 1898, p. 127.

Chile: Valparaiso.

PTEROMALUS MEGAREUS Walker.

Pteromalus megareus Walker, Ann. & Mag. Nat. Hist., X., 1842, p. 272, ♀.— Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 447, ♀.— Dalla Torre, Cat. Hym., V., 1898, p. 134.

Chile: Valdivia.

PTEROMALUS MYDON Walker.

Pteromalus mydon Walker, Monogr. Chalc., II., 1839, p. 87, ♀.— Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 439, ♀.— Dalla Torre, Cat. Hym., V., 1898, p. 136.

Chile: Chiloe.

PTEROMALUS ŒNÖE Walker.

Pteromalus œnöe Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 187, ♀.— Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 444, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 138.

Chile: Coquimbo.

PTEROMALUS OXYNTHES Walker.

Pteromalus? oxynthes Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 184, ♀.— Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 446, ♀.— Dalla Torre, Cat. Hym., V., 1898, p. 139.

Chile: Isle of Chonos.

PTEROMALUS PROTHOUS Walker.

Pteromalus prothous Walker, Monogr. Chalc., II., 1839, p. 87, ♀.— Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 440, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 142.

Chile: Chiloe.

PTEROMALUS RHŒBUS Walker.

Pteromalus rhœbus Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 187, ♀. — Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 442, ♀. — Dalla Torre, Cat. Hym., V., 1898, p. 146.

Chile: Coquimbo.

PTEROMALUS SESTIUS Walker.

Pteromalus sestius Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 186, ♀. — Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 443, ♀. — Dalla Torre, Cat Hym., V., 1898, p. 147.

Chile: Coquimbo.

PTEROMALUS TOXENUS Walker.

Pteromalus toxenus Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 186, ♀.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 447, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 151.

Chile: Coquimbo.

PTEROMALUS TRAULUS Walker.

Pteromalus traulus Walker, Monogr. Chalc., II., 1839, p. 88, ♀.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 440, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 151.

Chile: Chiloe.

PTEROMALUS VITULA Walker.

Pteromalus vitula Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 187, ♂.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 444, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 153.

Chile: Coquimbo.

PTEROMALUS VULSO Walker.

Pteromalus vulso Walker, Monogr. Chalc., II., 1839, p. 89, ♂.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 448, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 154.

Chile: Chiloe.

SUBFAMILY IV. SPHEGIGASTERINÆ.

TRIBE I. *Asaphini.*

Genus ASAPHES Walker.

ASAPHES VULGARIS Walker.

Decatoma metallica Spinola, Ann. mus. hist. nat., XVII., 1811, p. 151 (s. descrip.).

Eurytoma ænea Nees, Hym. Ichn. affin. Monogr., II., 1834, p. 42, ♀.—Reinhard, Stettin. ent. Zeitg., XX., 1859, p. 192.

Colax aphidii Curtis, Journ. Agric. Soc., III., 1842.

Pteromalus petiolatus Zetterstedt, Insect. Lappon., I., 1838, p. 432, ♀.

Chalcis vulgaris Blanchard, Cuvier: Règne. anim., Ed. 3ª, Ins., II., 1849; T. 114, f. 4.

Chrysolampus suspensus Nees, Hym. Ichn. affin. Monogr., II., 1834, p. 127.—Reinhard, Stettin. ent. Zeitg., XX., 1859, p. 192, ♀.

Chrysolampus altiventris Nees, Hym. Ichn. affin. Monogr., II., 1834, p. 127.

Chrysolampus æneus Ratzeburg, Ichn. d. Forstius, II., 1848, p. 185, ♀.—Ratzeburg, *opus cit.*, III., 1852, p. 228.

Isocratus vulgaris Förster, Hym. Stud., II., 1856, p. 58.—Thomson, Hym. Skand., IV., 1876, p. 208, ♀♂.

Asaphes vulgaris Walker, Ent. Mag., II., 1834, p. 152, ♀♂.—Blanchard, Hist. nat. Ins., III., 1840, p. 265.—Westwood, Intro. Mod. Class. Ins., II., 1840; Synop., p. 67.—Walker, Ann. & Mag. Nat. Hist., X., 1842, p. 114, ♀.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 462.—Ratzeburg, Ichn. d. Forstius, III., 1852, p. 229.—Reinhard, Berl. ent. Zeitschr., I., 1857, p. 76.—Reinhard, Stettin. ent. Zeitg., XX., 1859, p. 194.—Dalla Torre, Cat. Hym., V., 1898, p. 205.

Chile. This species is now distributed into all parts of the world. It is parasitic on various Aphids and is also occasionally bred from Coccids.

TRIBE III. *Sphegigasterini.*

Genus ACROCLISIS Förster.

ACROCLISIS BRASILIENSIS, sp. nov.

Male.—Length 2.5 mm. Bluish-green, closely punctate; scape, pedicel and legs, except coxæ, honey yellow, the femora more or less brownish toward base, the tips of the femora, the tibiæ and tarsi more of a yellowish-white; flagellum filiform, brown, pubescent, the funicle joints more than twice longer than thick; metanotum rugulose, with a median carina; abdomen oblong, the petiole rugulose, opaque, with a delicate carina above, the body of abdomen æneous black, smooth and shiny. Wings hyaline, the veins brownish-yellow.

Brazil: Chapada, in January. One specimen.

SUBFAMILY V. SPALANGIINÆ.

Genus SPALANGIA Latreille.

SPALANGIA BRASILIENSIS, sp. nov.

Female. — Length 3.1 mm. Æneous black, the tip of hind tibiæ testaceous, the tarsi, except last joint, yellowish-white; eyes pale, hairy. The oblong head is shining but in front with sparse thimble-like punctures and a median grooved line, the cheeks being long and closely opaquely punctured; the pronotum is closely umbilicately punctate, the lobes of the mesonotum are smooth, but posteriorly in front of the scutellum is a median carina formed by two longitudinal rows of coarse punctures; there are also punctures on each side of these rows and coarse punctures in the parapsidal furrows posteriorly; the axillar sutures are coarsely punctured; the scutellum proper is smooth, impunctate, except a transverse row of coarse elongate punctures posteriorly; the metathorax is rugose from coarse pits, while the mesopleura has a large deep median sulcus and a depression filled with elevated lines along the anterior margin. Wings hyaline, faintly dusky, with the veins dark brown.

Brazil: Santarem. One specimen.

FAMILY LXX. ELASMIDÆ.

Genus ELASMUS Westwood.

ELASMUS BRASILIENSIS, sp. nov.

Female. — Length 2 mm. Blue black, with a yellow line between the scutellum and the postscutellum; thorax above delicately reticulate, finely pubescent, the scutellum smooth, the head in front, except a few minute punctures, smooth and shining; the scape of the antennæ, the coxæ apically, the trochanters, front and middle femora, apex of hind femora, and the tibiæ and tarsi, yellowish-white, the hind tarsi fuscous at apex; the hind femora, except at apex, are bluish; the hairs on the hind tibiæ are arranged so as to form nine areas; flagellum light brown, the club darker. The abdomen is conically produced, compressed at sides, blue black except towards base beneath, where it is testaceous. Wings hyaline, the tegulæ and the subcostal vein pale yellowish, the rest of the veins brown.

Brazil: Corumba, in May. One specimen.

ELASMUS PERAFFINIS, sp. nov.

Male. — Length 1.8 mm. Blue black with the apex of the scutellum yellow; antennæ, including the branches, brown, the scape yellowish; mandibles and palpi pale; legs yellowish-white, the base of middle and hind coxæ, and a very broad band on their femora, black; the hairs on the hind tibiæ are so arranged as to form six or seven areas. Wings hyaline, the veins light brown, the tegulæ yellowish-white.

Brazil: Exact locality not given. One specimen.

ELASMUS CHAPADÆ, sp. nov.

Female. — Length 2 mm. Blue black, the apex of the scutellum yellow, the basal two segments of the abdomen red; the face is rather closely and distinctly punctate, the thorax reticulately sculptured, the scutellum smooth, shining; antennæ brown black, the scape yellowish; legs blue black except as follows: The front legs, except the coxæ basally, the sutures between the trochanters and femora of middle and hind legs, and the tibiæ and tarsi, are pale yellowish-white, the hind tarsi appear fuscous from the pubescence; the hairs on the hind tibiæ are arranged in two longitudinal rows, the inne row, however, being intersected by a short, cross hair line, forming two long areas. Wings hyaline, the veins brown.

Brazil: Chapada. One specimen.

FAMILY LXXI. EULOPHIDÆ.

SUBFAMILY I. ENTEDONINÆ.

TRIBE I. *Tetracampini.*

No species belonging to this tribe are yet known from South America.

TRIBE II. *Omphalini.*

Genus OMPHALE Haliday.

OMPHALE BRASILIENSIS, sp. nov.

Female.—Length 2 mm. Blue, the thorax with an æneous tinge; a dot on the front and middle knees, the extreme apex of all tibiæ and the tarsi, except the last joint, pale yellowish-white; mandibles pale; antennæ brown black, pubescent, the scape yellowish. Wings hyaline, bare or nearly, the veins pale, the postmarginal vein hardly developed, shorter than the very short stigmal vein. The abdomen is conically pointed, subcompressed beneath at base, and a little longer than the head and thorax united.

Brazil: Chapada, in April; Corumba, in May.

This species is allied to *O. nigrocyanea* Ashm. described from Grenada, W. I.

Genus CLOSTEROCERUS Westwood.

CLOSTEROCERUS CERCIUS Walker.

Closterocerus cercius Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 31, ♀.

Entedon cercius Walker, List. Chalc. Brit. Museum, I., 1846, p. 62.— Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 435, ♀.— Dalla Torre, Cat. Hym., V., 1898, p. 34.

Chile: Conception.

CLOSTEROCERUS PELOR Walker.

Closterocerus pelor Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 185, ♂.

Entedon pelor Walker, List. Chalc. Brit. Museum, I., 1846, p. 62.— Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 436, ♂.— Dalla Torre, Cat. Hym., V., 1898, p. 42.

Chile: Isle of Chonos.

CLOSTEROCERUS XENODICE Walker.

Closterocerus xenodice Walker, Ann. & Mag. Nat. Hist., X., 1843, p. 273, ♀♂.

Entedon xenodice Walker, List. Chalc. Brit. Museum, I., 1846, p. 62.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 436, ♀♂.— Dalla Torre, Cat. Hym., V., 1898, p. 45.

Chile: Valdivia.

TRIBE III. *Entedonini.*

UROENTEDON Ashmead, gen. nov.

This genus is based upon one of the most striking yet discovered in the subfamily Entedoninæ. It is easily recognized by the long, compressed abdomen which terminates in a long ovipositor, and has the hypopygium prominent, acutely plowshare-shaped; by the very long, ten-jointed antennæ, with *two* ring-joints, the funicle joints being globosely swollen towards base, with whorls of long hairs somewhat as in the males in the genera *Hoplocrepis* and *Lophocomus*; and by the wings, which are fringed, the marginal vein being very long, the stigmal vein short, while the post-marginal vein is long. The male is unknown.

UROENTEDON VERTICELLATUS, sp. nov.

(Plate XXXVIII., Fig. 4.)

Female. — Length 3 mm.; ovipositor as long as the abdomen. Highly polished, impunctate, the head, the prothorax beneath and the legs, honey yellow, the face with a greenish metallic luster; antennæ black, except the long slender scape which is yellowish at its basal half; thorax bottle blue, the axillæ faintly testaceous towards the sutures anteriorly at the sides, the scutellum and the mesopleura æneous black; abdomen black, the tip æneous, the extreme base bluish. Wings hyaline, fringed, the veins yellowish.

Brazil: Chapada, in September. One specimen.

Genus HOPLOCREPIS Ashmead.

HOPLOCREPIS BIFASCIATA, sp. nov.

(Plate XXXVIII., Fig. 5.)

Male. — Length 1.7 mm. Æneous black, the occiput, the metathorax, the petiole of abdomen and the legs mostly testaceous, the trochanters, the extreme base of the femora and the tarsi pale yellowish, the femora and tibiæ brown, the hind tibiæ, except at base and tips, black; the lateral lobes of the mesonotum are brownish; while the body of the abdomen is small, spatulate, black.

The ten-jointed antennæ are black with the scape and pedicel yellowish; the joints of the funicle are long, nodose-pedicillate, with whorls of long hairs, the first, second and third joints with a short branch above. Wings hyaline, the front wings with two transverse fuscous bands, the first band very narrow, situated a little before the basal third, the other broad, extending across the wing from the apical middle of the marginal vein and enclosing the stigmal vein.

Brazil: Chapada. One specimen.

Differs from all other males in this genus by having short branches on funicle joints one, two and three.

HOPLOCREPIS BRASILIENSIS, sp. nov.

Female. — Length 1.6 mm. Brownish-yellow with the collar anteriorly, the mesopleura, the metanotum, the petiole and the body of abdomen above, fuscous or brownish-black. The antennæ are black with the scape yellowish; legs flavo-testaceous, the hind femora medially and the hind tarsi fuscous. Wings banded as in *H. bifasciata.*

Brazil: Santarem. One specimen.

EULOPHOPTERYX Ashmead, gen. nov.

This genus comes nearest to *Lophocomus* Haliday, agreeing with it in all characters except the antennæ. The antennæ are ten-jointed, as in *Lophocomus*, but the joints of the funicle are longer than thick, cylindrical, loosely joined, not pedicellate nor compressed, with the club black or brown black, not white. In *Lophocomus* the funicle joints are distinctly although briefly pedicellate, compressed, two or three wider than long, while the club is white or yellowish-white.

EULOPHOPTERYX CHAPADÆ, sp. nov.

(Plate XXXVIII., Fig. 6.)

Female.—Length 1.5 mm; robust, æneous black, impunctate, except the pronotum, which is distinctly punctured; the scape, the pedicel and the legs, except as hereafter noted, are honey yellow; flagellum brown black, the front and middle femora and the base of their tarsi are metallic brown. The front wings are hyaline, with a subfuscous cloud on the disk, the veins yellowish. The abdomen is broadly oval, petiolate, not longer than the thorax, above depressed, beneath subconvex.

Brazil: Chapada, in August. One specimen.

Genus LOPHOCOMUS Haliday.

LOPHOCOMUS ANAITIS (Walker).

Cirrospilus anaitis Walker, Monogr. Chalc., II., 1839, p. 91, ♀.

Lophocomus anaitis Haliday, Trans. Ent. Soc. London, III., 1843, p. 297.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 432, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 70.

Bellerus anaitis Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 32, ♂.—Spinola Gay: Hist. de Chile, Zool., VI., 1851, p. 429, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 26.

Chile: Conception; Isle of Chiloe.

LOPHOCOMUS CYANEUS, sp. nov.

Female.—Length 1.6 mm. Dark blue, with æneous reflections, the middle lobe of the mesonotum and the inner margins of the lateral lobes, æneous; antennæ, except the club, which is yellowish-white, black: legs honey yellow, with the hind tibiæ fuscous, the hind coxæ and trochanters somewhat whitish; abdomen beneath rufo-piceous. Wings subhyaline with a large subfuscous discoidal cloud.

Brazil: Santarem. One specimen.

Genus HORISMENUS Walker.

HORISMENUS CLEODORA Walker.

Horismenus cleodora Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 31, ♀.

Entedon cleodora Walker, List Chalc. Brit. Museum, I., 1846, p. 66.—Dalla Torre, Cat. Hym., V., 1898, p. 35.

Peru: Lima.

TABLE OF NEW SPECIES.

1. Species mostly æneous black or blue 2
 Species mostly metallic green or at least above.
  Prothorax at the sides, the mesopleura and the coxæ blue, rest of legs and the scape pale yellowish; metanotum long with two opaque sulci .... *H. bisulcus.*
2. Species mostly blue 3
 Species mostly æneous black.
  Metanotum brassy; scape, pronotum anteriorly, pleuræ and legs, except as noted, dark blue; tips of femora, the tibiæ and tarsi, except last joint, yellowish-white .... *H. brasiliensis.*
  Metanotum not brassy; head in front; the axillæ and a spot on upper margin of the mesopleura metallic greenish; scape and legs, except coxæ, honey yellow, a spot on knees, tips of tibiæ and the tarsi yellowish-white; abdomen conically pointed, a little longer than the head and thorax united .... *H. corumbæ.*
3. Scape and legs, except coxæ and parts hereafter noted, honey yellow, the femora dusky basally, the knees, tips of tibiæ and the tarsi, whitish; scutellum with an æneous tinge .... *H. persimilis.*
 Scape and legs, except coxæ, honey yellow, the tarsi whitish; frons, the dorsum of pronotum and the disk of the mesonotum, æneous .... *H. æneicollis.*

HORISMENUS BISULCUS, sp. nov.

Female.—Length 2.4 mm.; above metallic greenish, the prothorax at the sides, the mesopleura and the coxæ blue, the abdomen black; the scape of the antennæ, except at apex, and the legs, except coxæ, are pale yellowish or yellowish-white. The head and the thorax, except the metanotum, are mostly scaly punctate or punctate, the metanotum being smooth and shining, with two broad longitudinal sulci, extending from base to apex. Wings hyaline, the veins pale yellowish. The abdomen is shorter than the thorax, short ovate, the terminal segments retracted within the large second segment which occupies most of the whole surface; the petiole is opaque, furrowed and a little longer than thick.

Brazil: Chapada, in April.

HORISMENUS BRASILIENSIS, sp. nov.

Female.—Length 1.6 mm.; æneous black, with a bluish tinge on the parapsidis and at the sides of the thorax, the metathorax being brassy; the legs, except the coxæ, the femora and the last joint of the tarsi, are yellowish-white, the coxæ, the femora except at apex and the abdomen, are dark blue, the last joint of the tarsi being black or brown. The metanotum is smooth, with two longitudinal sulci. The abdomen is ovate, not longer than the thorax, the second segment occupying hardly half its whole surface, the following segments short, nearly equal.

Brazil: Rio de Janeiro, in August.

HORISMENUS CORUMBÆ, sp. nov.

Female.—Length 2 mm. Æneous black, the thorax smooth except the middle mesothoracic lobe; the legs, except the coxæ, are honey yellow, with the knees, tips of tibæ and the tarsi yellowish white. The abdomen is conically pointed, a little longer than the head and thorax united, the second segment being very long, occupying two thirds the whole surface.

Brazil: Corumba, in February.

HORISMENUS PERSIMILIS, sp. nov.

Female.—Length about 0.9 mm. Mostly blue, the scutellum with a decided æneous tinge; flagellum brown black, pubescent; scape and legs, except as hereafter noted, honey yellow, the knees, tips of tibiæ and the tarsi whitish. The abdomen is ovate, not longer than the thorax, the second segment occupying more than half the whole surface.

Brazil: Chapada, in April.

HORISMENUS ÆNEICOLLIS, sp. nov.

Female.—Length 1.6 mm. Mostly blue, the pronotum *above* and the metanotum æneous or metallic greenish, the scape of the antennæ and the legs, except the coxæ, honey yellow. The abdomen is ovate, a little longer than the thorax, the second segment occupying hardly half the whole surface.

Brazil: Santarem.

PELOROTELUS Ashmead, gen. nov.

Allied to *Pleurotropis* Förster, but easily separated by the absence of the lateral metathoracic carinæ, by the metathorax being produced into a long neck at apex and by the abdomen, which is very lengthy-petiolated, the petiole being about as long as the hind femora.

The head is very wide, sublenticular, seen from in front wider than long, the occiput concave; the antennæ are ten-jointed, with one ring-joint, the scape clavate, the pedicel obconical, not much longer than wide at apex, the funicle joints oblong, about thrice as long as thick, briefly pedunculate at apex, clothed with rather long hairs; the front wings have the marginal vein long, the stigmal vein short, the postmarginal vein not developed; otherwise it is similar to *Pleurotropis.*

PELOROTELUS CŒRULENS, sp. nov.

Male.—Length 1.8 mm. Dark blue, the head and thorax reticulately punctured-the middle mesothoracic lobe and the lateral ridges of the metanotum with a metallic greenish tinge; a spot on the knees, extreme apices of tibiæ and the tarsi are yellowish-white; mandibles testaceous. The antennæ are rather long, ten-jointed, the scape elongate, the funicle four-jointed, the joints rather long, loosely joined, with sparse, moderately long hairs, the last joint being fully thrice as long as thick at the middle, the club three-jointed, longer than the first joint of the funicle, the last joint being represented by a little spur. The abdomen is clavate, the petiole, which is attached to the long neck of the metathorax, very long, shagreened, the body smooth and polished. Wings hyaline, the veins pale yellowish.

Brazil: Santarem, in April. One specimen.

Genus ENTEDON Dalman.

ENTEDON ANTANDER Walker.

Entedon antander Walker, Monogr. Chalc., II., 1839, p. 70, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 33.

Brazil: Bahia.

ENTEDON BADIUS Walker.

Entedon badius Walker, Ann. & Mag. Nat. Hist., X., 1843, p. 115, ♂.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 433.—Dalla Torre, Cat. Hym., V., 1898, p. 34.

Chile: Valparaiso.

ENTEDON EMPERAMUS Walker.

Entedon emperamus Walker, Monogr. Chalc.. II., 1839, p. 70, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 36.

Brazil: Bahia.

ENTEDON FLACILLA Walker.

Entedon flacilla Walker, Ann. & Mag. Nat. Hist., X., 1843, p. 115, ♂.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 434.—Dalla Torre, Cat. Hym., V., 1898, p. 37.

Chile: Valparaiso.

ENTEDON HEGELOCHUS Walker.

Entedon hegelochus Walker, Monogr. Chalc., II., 1839, p. 70, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 38.

Brazil: Bahia.

ENTEDON THESTIS Walker.

Cirrospilus thestis Walker, Monogr. Chalc., II., 1839, p. 74, ♀.

Entedon thestis Walker, List Chalc. Brit. Museum, I., 1846, p. 67.— Dalla Torre, Cat. Hym., V., 1898, p. 44.

Brazil : Bahia.

ENTEDON UFENS Walker.

Entedon ufens Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 184, ♀. — Dalla Torre, Cat. Hym., V., 1898, p. 45.

Entedon rifens Spinola, Gay : Hist.de Chile, Zool., VI., 1851, p. 433, ♀.

Chile : Isle of Chonos.

Genus DEROSTENUS Westwood.

DEROSTENUS ALCESTAS Walker.

Derostenus alcestas Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 31, ♂.

Entedon alcestas Walker, List Chalc. Brit. Museum, I., 1846, p. 137.— Spinola, Gay : Hist. de Chile, Zool., VI., 1851, p. 437, ♂.—Dalla Torre, Cat. Hym., V., 1898, p. 32.

Chile : Conception.

TRIBE IV. *Pediobiini.*

PARACRIAS Ashmead, gen. nov.

A genus allied to *Acrias* Walker. Form short and robust, the thorax coarsely reticulately sculptured, the head highly polished, impunctate in front.

The head is very wide, lenticular, wider than the thorax and very thin antero-posteriorly, the occiput concave ; the eyes are large, ovate, the malar space short but distinct ; the antennæ are nine-jointed, with a ring-joint, the funicle four-jointed, the joints oblong oval, briefly peduncled, hairy, the club two-jointed, the last joint represented by a spur ; the thorax is shaped as in *Entedon* but *without* parapsidal furrows, the metathorax being produced into a neck at apex, with a delicate median carina ; the abdomen is ovate or conic-ovate, distinctly petiolate, the second segment (first body segment) being very long, occupying most of the surface, the following segments very short, apparently capable of being retracted.

PARACRIAS LATICEPS, sp. nov.

(Plate XXXIX., Fig. 1.)

Female.—Length 1.6–1.8 mm. Æneous black, the thorax with a greenish tinge above, and coarsely reticulately sculptured, the coxæ and legs bluish, the trochanters, a spot on the knees, the extreme apex of tibiæ, and the tarsi yellowish-white. Wings hyaline, the veins yellowish, the postmarginal vein hardly developed, the stigmal vein very short, its knob subsessile. The metathorax is contracted into a neck at apex and punctate. The abdomen is petiolate, the body in one specimen is conic-ovate, pointed at apex, in another specimen short oval, the terminal segments in the latter evidently being retracted within the very large second segment which occupies nearly the whole surface of the abdomen.

Brazil: Chapada, in August and September.

URODEROSTENUS Ashmead, gen. nov.

This genus is based upon a species from St. Vincent, W. I., and is easily recognized by the strongly exserted ovipositor and by the wings having a long marginal fringe, as in some Mymarids.

AMETALLON Ashmead, gen. nov.

This genus comes very close to *Chrysonotomyia* Ashmead, but is easily recognized by its non-metallic color, and by the very short stigmal vein. The antennæ are nine-jointed, with one ring-joint, the flagellum being filiform, tapering off towards apex, clothed with sparse hairs, the funicle being three-jointed. The abdomen is long, conic-ovate.

AMETALLON CHAPADÆ, sp. nov.

Female.— Length 1.4 mm. Honey yellow, the abdomen mostly of a brownish-yellow, with a transverse fuscous band a little before the middle; eyes brown; antennæ filiform, the flagellum tapering off to a point at apex, with long, sparse hairs. Wings hyaline, fringed, the veins yellowish, the marginal vein very long, fully twice the length of the submarginal, the stigmal vein short but with its knob petiolate, and longer than the postmarginal. The abdomen is conic-ovate, a little longer than the head and thorax united and ends in a short ovipositor.

Brazil: Chapada, in April. Two specimens.

SUBFAMILY II. APHELININÆ.

Genus ASPIDIOTIPHAGUS Howard.

ASPIDIOTIPHAGUS CITRINUS (Craw).

Coccophagus citrinus Craw, Destructive Insects, Sacramento, Cal., 1891.

Aspidiotiphagus citrinus Howard, Insect Life, Vol. VI., 1891, p. 234.—Howard, Lechn. Series, No. 1, U. S. Dept. Agric., p. 31, f. 10.—Dalla Torre, Cat. Hym., V., 1898, p. 224.

Brazil: Bahia, March, 1883 (Albert Koebele).

SUBFAMILY III. TETRASTICHINÆ.

TRIBE I. *Ceratoneurini.*

This tribe is at present known only from Mexico and the West Indies, but representatives will undoubtedly be discovered in South America.

TRIBE II. *Tetrastichini.*

Genus TRICHOPORUS Förster.

TRICHOPORUS COLLIGUAYA (Philippi).

Exurus colliguaya Philippi, Stettin. ent. Zeitg., XXXIV., 1873, p. 296; T. 1.—Dalla Torre, Cat. Hym., V., 1898, p. 159.

Chile.

TRICHOPORUS MELLEUS, sp. nov.

Female.—Length 1.8 mm. Honey yellow, punctate, the eyes brown, the abdomen with a blackish spot on each side near the middle, the scape and legs pale yellowish; flagellum long, filiform, hairy; wings hyaline, the veins pale yellowish. The abdomen is cylindrical, pointed at apex and as long as the head and thorax united.

Male. — Length 1.4 mm. Agrees in color with the female except that the blackish spots near the middle of the abdomen unite and form a transverse band, while the veins in the front wings are brownish. The flagellum is long and the hairs are much longer than in the female.

Brazil: Santarem; Chapada.

TRICHOPORUS VIRIDICYANEUS, sp. nov.

Female.— Length 2–2.6 mm. Metallic bluish-green to blue, punctate; scape, trochanters, apices of all femora, and all tibiæ and tarsi, except the last joint, pale yellowish; flagellum brownish-yellow, pubescent; wings hyaline, the veins yellowish. The abdomen is long, cylindrical, twice as long as the thorax, pubescent, the first and second body segments about equal, shorter than the third, the first segment longer than the third, the sixth and seventh short, the seventh conical.

Male. — Length 1.4–1.5 mm. Agrees well with the female, except in the usual sexual differences and in a slight difference in the color of the antennæ and legs: The flagellum is darker with longer hairs and with only *one* ring-joint, while the front and middle femora are dusky only at base. The abdomen is cylindrical, a little longer than the head and thorax united.

Brazil: Chapada, in April. Fourteen females, six male specimens.

TRICHOPORUS PERSIMILIS, sp. nov.

Female.—Length 2.8 mm. Metallic brown black, punctate, the abdomen brown beneath; flagellum brown, hairy; scape, pedicel and legs, including the coxæ, honey yellow, the femora more or less dusky or brownish, especially basally; otherwise it is very similar to *T. viridicyaneus* except that the first body segment of the abdomen is twice the length of the second.

Brazil: Chapada, in April. Two specimens.

Genus TETRASTICHUS Haliday.

TETRASTICHUS ARCHIDEUS (Walker).

Cirrospilus archideus Walker, Monogr. Chalc., II., 1839, p. 75, ♀.

Tetrastichus archideus Walker, List Chalc. Brit. Museum, I., 1846, p. 81.—Dalla Torre, Cat. Hym., V., 1898, p. 10.

Brazil: Bahia.

TETRASTICHUS ATHENAIS (Walker).

Cirrospilus athenais Walker, Monogr. Chalc., II., 1839, p. 72, ♀.

Tetrastichus athenais Walker, List Chalc. Brit. Museum, I., 1846, p. 80.—Dalla Torre, Cat. Hym., V., 1898, p. 10.

Brazil: Bahia.

TETRASTICHUS CACUS (Walker).

Cirrospilus cacus Walker, Monogr. Chalc., II., 1839, p. 75, ♀.

Tetrastichus cacus Walker, List Chalc. Brit. Museum, I., 1846, p. 80.—Dalla Torre, Cat. Hym., V., 1898, p. 12.

Brazil: Bahia.

TETRASTICHUS CLEONICA (Walker).

Cirrospilus cleonica Walker, Monogr. Chalc., II., 1839, p. 69, ♂.

Tetrastichus cleonica Walker, List. Chalc. Brit. Museum, I., 1896, p. 81.—Dalla Torre, Cat. Hym., V., 1898, p. 12.

Brazil: Bahia.

TETRASTICHUS DAIMACHUS (Walker).

Cirrospilus daimachus Walker, Monogr. Chalc., II., 1839, p. 73, ♀.

Tetrastichus daimachus Walker, List. Chalc. Brit. Museum, I., 1846, p. 80.—Dalla Torre, Cat. Hym., V., 1898, p. 13.

Brazil: Bahia.

TETRASTICHUS DEILOCHUS (Walker).

Cirrospilus deilochus Walker, Monogr. Chalc., II., 1839, p. 74, ♀.

Tetrastichus deilochus Walker, List Chalc. Brit. Museum, I., 1846, p. 81.—Dalla Torre, Cat. Hym., V., 1898, p. 13.

Brazil: Bahia.

TETRASTICHUS FEBRUUS (Walker).

Cirrospilus februus Walker, Monogr. Chalc., II., 1839, p. 73, ♀.

Tetrastichus februus Walker, List Chalc. Brit. Museum, I., 1846, p. 80.—Dalla Torre, Cat. Hym., V., 1898, p. 15.

Brazil: Bahia.

TETRASTICHUS NARCÆUS Walker.

Tetrastichus narcæus Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 188, ♀.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 427, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 19.

Chile: Coquimbo.

TETRASTICHUS NAUCLES Walker.

Tetrastichus naucles Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 32, ♀. — Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 425, ♀. — Dalla Torre, Cat. Hym., V., 1898, p. 19.

Chile: Conception.

TETRASTICHUS NORAX Walker.

Testrastichus norax Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 32, ♀. — Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 425, ♀. — Dalla Torre, Cat. Hym., V., 1898, p. 19.

Chile: Conception.

TETRASTICHUS PHRYNO (Walker).

Cirrospilus phryno Walker, Monogr. Chalc., II., 1839, p. 90, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 83.

Brazil: Bahia.

TETRASTICHUS POLYBÆA Walker.

Tetrastichus polybæa Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 116, ♀♂.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 426, ♀♂.—Dalla Torre, Cat. Hym., V., 1898, p. 21.

Chile: Valparaiso.

TETRASTICHUS SCADIUS Walker.

Tetrastichus scadius Walker, Ann. & Mag. Nat. Hist., XI., 1843, p. 116, ♀.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 424, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 22.

Chile: Valparaiso.

TETRASTICHUS VALERUS (Walker).

Cirrospilus valerus Walker, Monogr. Chalc., II., 1839, p. 72, ♀.

Tetrastichus valerus Walker, List Chalc. Brit. Museum, I., 1846, p. 79.—Dalla Torre, Cat. Hym., V., 1898, p. 24.

Brazil: Bahia.

TETRASTICHUS XENOCLES (Walker).

Cirrospilus xenocles Walker, Monogr. Chalc., II., 1839, p. 90, ♀.

Tetrastichus xenocles Walker, List Chalc. Brit. Museum, I., 1846, p. 81.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 427, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 25.

Chile: Chiloe.

TABLE OF NEW SPECIES.

1. Not wholly blue.. 2
   Wholly blue, the tarsi white.
      Abdomen conically produced, longer than the thorax.................. *T. albitarsis*, sp. nov.
2. Black or blue-black.. 3

Æneous black, the mesonotum and the scutellum metallic, delicately shagreened; two rows of punctures along the parapsidal sutures; legs, except the coxæ, yellowish, the femora dusky basally; abdomen conic-ovate, not longer than the thorax . . . . *T. chapadæ*, sp. nov.

3. Blue-black; the mesonotum microscopically shagreened; a single row of punctures along the parapsidal furrows; legs, except coxæ, honey-yellow, the femora dusky medially and basally; abdomen conically pointed, longer than the head and thorax united. . . . . *T. brasiliensis*, sp. nov.

Black; mesonotum microscopically shagreened; *without* a row of punctures along the parapsidal furrows; scape and legs, except coxæ, honey yellow; abdomen, seen from above, rounded, shorter than the thorax. . . . . *T incongruus*, sp. nov.

TETRASTICHUS ALBITARSIS, sp. nov.

Female.—Length 1.5 mm. Wholly dark blue, except the parapsides which are æneous, the base of the antennal scape which is honey yellow, and the tarsi which are yellowish-white except the last joint. The insect is smooth impunctate, except the head which has a few minute punctures on the face; otherwise I can detect no distinct sculpture, although under a very high power the thorax above appears feebly shagreened. Wings hyaline, the veins brown. Abdomen conic-ovate, little longer than the head and thorax united, smooth and shining, depressed above, subcarinate beneath towards base. The flagellum is broken off at the pedicel and cannot be described in detail.

Brazil: Rio de Janeiro, in August. One female specimen.

TETRASTICHUS CHAPADÆ, sp. nov.

Female.—Length 1.8 mm. Æneous black, the mesonotum and scutellum with a metallic greenish tinge, shagreened, the head punctate in front; scape, pedicel and legs, except coxæ, honey-yellow, the femora faintly dusky basally; flagellum brown, pubescent, the first joint of the funicle is the largest, more than twice longer than thick. The middle lobe of the mesonotum has two rows of punctures on each side, along the parapsidal furrows. The metanotum is punctate and has a distinct median carina. The wings are hyaline, the veins yellowish. The abdomen is conic-ovate, smooth impunctate and about the length of the thorax, the first body segment being the longest.

Brazil: Chapada, in April. One female specimen.

TETRASTICHUS BRASILIENSIS, sp. nov.

(Plate XXXIX., Fig. 2.)

Female. — Length 2 mm. Dark blue black, nearly black, with a faint æneous tinge, the head except in the scrobes with thimble-like punctures, the thorax above shagreened, the middle lobe of the mesonotum with a single row of punctures along the parapsidal furrows; scape and legs, except coxæ, honey yellow, the femora more or less dusky medially, the tarsi paler yellowish. Wings hyaline, the veins yellowish. Abdomen conically pointed, longer than the head and thorax united, depressed above, convex beneath towards base.

Brazil: Chapada, in January. One female specimen.

TETRASTICHUS INCONGRUUS, sp. nov.

Female.—Length 1.5 mm. Black, the head smooth, shining, except some minute punctures, in front near the eyes, the thorax microscopically shagreened, *without* a row of punctures along the parapsidal furrows; scape and legs, except the coxæ honey-yellow, the femora a little darkened. Wings hyaline, the veins yellowish. The abdomen, as seen from above, is rounded, as in the genus *Syn* Förster, shorter than the thorax; beneath it is carinate.

Brazil: Santarem. One female specimen.

SUBFAMILY IV. ELACHERTINÆ.

TRIBE I. *Euplectrini.*

Genus EUPLECTUS Westwood.

TABLE OF SPECIES.

1. Æneous black.
    - All coxæ yellowish-white.......... 2
    - Hind coxæ black.
        - Legs, except the hind coxae and the hind femora, honey yellow, the hind femora brownish at the thickened portion. Female.......... *E. brasiliensis.*
2. Legs yellowish-white.
    - Antennæ wholly pale yellow or with the flagellum wholly brown.......... 3
    - Antennæ not wholly pale yellow, the six last joints brown; basal half of abdomen beneath and above, testaceous, the apical half black, as well as a streak at sides basally; clypeus and malar space black.......... *E. corumbæ.*
3. Antennæ wholly pale yellowish; scutellum basally purplish; metallic green apically; a triangular area at base of metanotum connected with a median carina; body of abdomen rufous basally; clypeus reddish; malar space black. Male.......... *E. solitarius.*
    - Antennæ not wholly pale, the pedicel and flagellum brown; scutellum wholly black; clypeus and cheeks testaceous; body of abdomen beneath, except just at apex, and above basally, rufous. Male.......... *E. chapadæ.*

EUPLECTRUS BRASILIENSIS, sp. nov.

Female.—Length 1.6 mm. Æneous black, the head and thorax with long, sparse hairs; clypeus honey yellow; antennæ, except faintly toward apex, and the legs, except the hind coxæ and the hind femora, honey yellow, the hind coxæ black, the hind femora more or less brownish except at base. Wings hyaline, pubescent, the tegulæ and the veins pale yellowish. The abdomen is black, with a reddish spot basally both above and beneath, the petiole shagreened. The joints of the funicle are long, the last joint being fully thrice as long as thick.

Brazil: Porto Branca, in April. One specimen.

EUPLECTRUS CORUMBÆ, sp. nov.

Female.— Length 1.5 mm. Æneous black, the clypeus black; first three joints of antennæ and the legs, including all coxæ, pale honey yellow or yellowish-white; rest of antennæ brown; basal half of abdomen beneath and above testaceous; otherwise hardly distinguishable from *E. brasiliensis*, except that the last three joints of the funicle are much shorter than in that species, being only a little longer than thick.

Brazil: Corumba, in May. One specimen.

EUPLECTRUS SOLITARIUS, sp. nov.

Male.— Length 2 mm. Æneous black, the clypeus testaceous; antennæ and legs, including coxæ, yellowish-white; body of abdomen rufous at basal half above and with a small spot of the same color beneath; the petiole is more than twice as long as thick, shagreened.

Brazil: Rio de Janeiro, in November. One specimen.

EUPLECTRUS CHAPADÆ, sp. nov.

Male.— Length 1.6 mm. Æneous black, the clypeus and the cheeks testaceous; flagellum, including the pedicel brown; scape of antennæ and the legs, including all coxæ, yellowish-white; body of abdomen, except apically and a streak along the sides, rufous or testaceous.

Brazil: Chapada, in April. Two specimens (one badly broken).

TRIBE II. *Ophelinini.*

Genus ARDALUS Howard.

ARDALUS HOWARDII, sp. nov.

Male. — Length 1.3 mm. Black; the mandibles and the flagellum are testaceous; the trochanters, base and tips of femora, base of hind tibiæ, and rest of the legs pale yellowish, the femora, except as noted, and the apical two thirds of the hind tibiæ being brown or brown black. The head is smooth, impunctate, the eyes grayish-brown, pubescent, the ocelli red; flagellum filiform, tapering off towards apex, the funicle joints loosely joined, the last fully twice longer than thick, the preceding joints a little longer. The thorax is rather coarsely rugulose, the metathorax polished, with two median carinæ and some wrinkles on each side. Wings hyaline, with a faint discal spot beneath the apex of the stigmal vein, the veins pale yellowish. The abdomen in outline is nearly round, depressed, the petiole long, smooth and shining, the first and second body segments occupy half the whole surface, the second the larger, the following short, about equal.

Brazil: Chapada, in May. One specimen. Named in honor of Dr. L. O. Howard.

Genus LEUCODESMIA Howard.

LEUCODESMIA FLAVICEPS, sp. nov.

Female. — Length 2.3 mm. Head yellow, the eyes brown, pubescent; thorax and abdomen black; scape and the legs, except coxæ and the front femora medially, honey yellow, the coxæ black, the front femora medially brownish; flagellum brown black, subcompressed, the joints of the funicle loosely joined, the first joint the longest, about twice as long as wide, the last joint only a little longer than wide. The head is smooth impunctate, except a slight shagreening on the frons above; the thorax is scaly punctate, the metanotum being smooth, with a median carina. Wings hyaline, the veins yellowish. The abdomen is ovate, depressed, not longer than the thorax.

Brazil: Chapada, in April. One specimen.

ELACHERTOMORPHA Ashmead, gen. nov.

This genus resembles *Elachertus* Spinola, and could be easily mistaken for it, except that the hind tibiæ have *two* apical spurs. From *Leucodesmia* Howard, it is separated by the antennæ being ten-jointed and by having the scutellum grooved.

ELACHERTOMORPHA FLAVICEPS, sp. nov.

Female.—Length 1.5 mm. Head, except the eyes and two converging black lines on the scrobes, honey yellow; thorax and abdomen æneous black, the former shagreened, with the scutellum rugulose and the metanotum carinate; scape of antennæ and the legs, except as noted, honey yellow, the middle and hind coxæ black, the front and middle femora basally, more or less dusky, the hind femora medially and the apex of the hind tibiæ brownish. Wings hyaline, the veins yellowish. The abdomen is rounded, smooth and shining, shorter than the thorax, with a short petiole.

Brazil: Santarem. One specimen.

SYMPIESOMORPHA Ashmead, gen. nov.

This genus has the general habitus of *Sympiesis* Förster, with which I at first confused it, but one may easily distinguish it by the *two* spurred hind tibiæ and by the distinct parapsidal furrows. It also resembles *Stenomesius* Westwood but is easily separated by the pubescent eyes, and by the longer and more sessile abdomen.

SYMPIESOMORPHA BRASILIENSIS, sp. nov.

Female.—Length 3 mm. Black; the abdomen is æneous black, with a large rufous spot at base both above and beneath; scape and legs, including the coxæ, honey yellow, the tips of the coxæ and the trochanters whitish; flagellum black. Wings hyaline, the tegulæ and veins pale yellowish. The head is smooth, with a few minute punctures in front; thorax reticulately punctate, clothed with whitish hairs, the metanotum with a sharp median carina. The abdomen is ovate, depressed, about as long as the head and thorax united.

Brazil: Chapada, in September. One specimen.

SYMPIESOMORPHA OBSCURA, sp. nov.

Female.—Length 1.8 mm. Black with a bluish tinge, the head in front and the metapleura metallic greenish, the abdomen æneous black, the dorsum with a yellowish band before the middle, the base before the band being blue, the venter with a yellowish spot near the middle; the scape and legs, except the coxæ and most of the femora, are pale yellowish or yellowish-white; flagellum black. Wings hyaline, the veins yellowish.

Brazil: Corumba. One specimen.

Genus STENOMESIUS Westwood.

STENOMESIUS DIMIDIATUS, sp. nov.

(Plate XXXIX., Fig. 3.)

Female.—Length 2.1 mm. Flavo-testaceous, the head in front below pale yellowish, the scutellum subfuscous, the metathorax and apical half of the abdomen black; scape and legs, including the coxæ, pale yellowish; wings hyaline, the front pair with a fuscous spot from the apex of the stigmal vein. The head is smooth, the thorax, and especially the middle mesothoracic lobe, is rugulose, the scutellum coriaceous, the furrows with large punctures; the metanotum has a sharp median carina and is transversely regulose on each side. The abdomen is ovate, smooth and polished, except the petiole, which is finely rugulose.

Brazil: Chapada. One specimen.

ALOPHUS Ashmead, gen. nov.

This genus falls in between *Diglyphomorpha* Ashm. and *Sympiesis* Först.; it comes nearest to the first mentioned but differs in not being metallic, by having ten-jointed antennæ, and by having only two dorsal grooved lines on the scutellum. In *Sympiesis* the antennæ are ten-jointed, but it is metallic and the scutellum is without dorsal grooved lines.

ALOPHUS BRASILIENSIS, sp. nov.

Female.—Length 2.8–3 mm. Honey yellow, the eyes brown, the flagellum and the apex of the abdomen above, black, the legs yellowish, the tarsi whitish, the apical half or more of hind tibiæ sometimes fuscous. Wings hyaline, with a fuscous cloud beneath the stigmal vein.

The abdomen is long, conical, depressed above, convex beneath, usually considerably longer than the head and thorax united, black or blackish at apex above.

Male.—Length 2 mm. Head, except the clypeus, the lower part of the cheeks and the mouth parts, black, the thorax honey yellow, with the disk of the scutellum, the mesopleura and the metathorax black ; flagellum light brown ; scape and the legs pale yellowish. The abdomen is oblong, briefly petiolate, depressed, about the length of the thorax, the basal part of the dorsum yellowish.

Brazil : Chapada, in April ; Rio de Janeiro, in September.

TRIBE III. *Elachertini.*

Genus ELACHERTUS Spinola.

ELACHERTUS CATTA (Walker).

Eulophus catta Walker, Monogr. Chalc., II., 1839, p. 71, ♀.
Elachestus catta Walker, List Chalc. Brit. Museum, I., 1846, p. 69.
Elachistus catta Dalla Torre, Cat. Hym., V., 1898, p. 77.

Brazil : Bahia.

ELACHERTUS GYES (Walker).

Eulophus gyes Walker, Monogr. Chalc., II., 1839, p. 89, ♂.
Elachestus gyes Walker, List Chalc. Brit. Museum, I,, 1846, p. 69.
Elachistus gyes Dalla Torre, Cat. Hym., V., 1898, p. 78.

Chile : Isle of Chiloe.

SUBFAMILY V. EULOPHINÆ.

TRIBE I. *Eulophini.*

Genus SYMPIESIS Förster.

Genus EULOPHUS Geoffroy.

EULOPHUS? LAONOME Walker.

Eulophus laonome Walker, Monogr. Chalc., II., 1839, p. 90, ♀.—Spinola, Gay : Hist. de Chile, Zool., VI., 1851, p. 431, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 62.

Chile : Isle of Chiloe.

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Eulophus rhianus Walker, Ann. & Mag. Nat. Hist., X., 1842, p. 116, ♀.—Spinola, Gay: Hist. de Chile, Zool., VI., 1851, p. 430, ♀.—Dalla Torre, Cat. Hym., V., 1898, p. 67.

Chile: Valparaiso.

FAMILY LXXII. TRICHOGRAMMIDÆ.

Genus PENTARTHRON Riley.

PENTARTHRON BRASILIENSIS, sp. nov.

Female.—Length 0.4 mm. Head and thorax above uniformly honey-yellow, the temples, cheeks, mouth parts, sides of thorax and the abdomen beneath yellowish-white, the eyes brown; the antennæ, except the club which is dusky, and the legs are very pale or yellowish-white; the pedicel is hardly longer than thick, much shorter than the first joint of the funicle which is conical and more than twice olnger than thick at apex, the second funicle joint being small, annular, the club large, fusiform, as long as the scape. The wings are hyaline, with a long marginal fringe, the front wings with the pubescence arranged in eight hair lines.

Type.—Cat. No. 6596, U. S. N. M.

Brazil: Bahia. Taken on cotton, March, 1883, by Mr. Albert Koebele.

FAMILY LXXIII. MYMARIDÆ.

SUBFAMILY I. GONATOCERINÆ.

I have seen no representative of this subfamily from South America, although it must be well represented by many species in several genera.

SUBFAMILY II. MYMARINÆ.

Genus POLYNEMA Haliday.

POLYNEMA BRASILIENSIS, sp. nov.

Female.—Length 1 mm.; ovipositor about one third the length of the abdomen. Polished black; antennæ brownish-fuscous, with the scape, pedicel, first joint of funicle, the apex of the fourth and base of fifth funicle joints, yellow; the legs except as noted, and the abdominal petiole pale yellow, the hind femora toward apex and the apical two fifths of the hind tibiæ, dusky or fuscous.

Brazil: Chapada, in April. One specimen.

POLYNEMA RUFESCENS, sp. nov.

Male.—Length 0.8 mm. Reddish-brown, the eyes and the flagellum brown black; scape, pedicel and legs, except the hind tibiæ which are fuscous, honey yellow; the abdomen towards the apex is tinged with fuscous.

Type.—Cat. No. 6595 U. S. N. M.

Brazil: Pernambuco, February, 1883 (Mr. A. Koebele).

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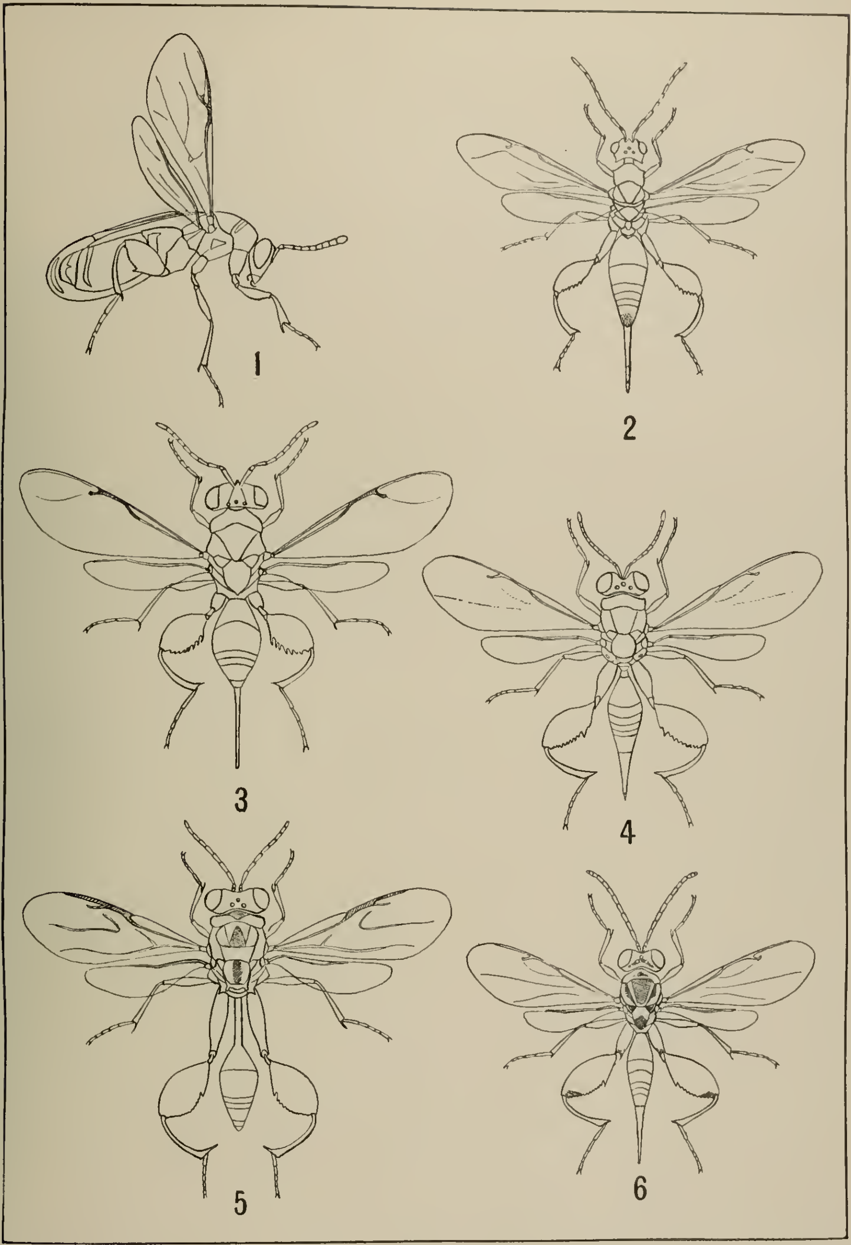
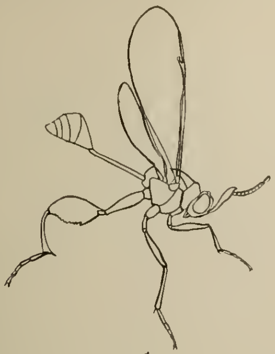


1. *Leucospis enderleini* Ashmead, ♀.
2. *Thaumatelia pulchripennis* Ashmead, ♀.
3. *Epitelia stylata* Walker, ♀.
4. *Eustypiura bicolor* Ashmead, ♀.
5. *Xanthomelanus dimidiatus* Fabricius, ♂.
6. *Eustypiura sexmaculata*, Ashmead, ♀.



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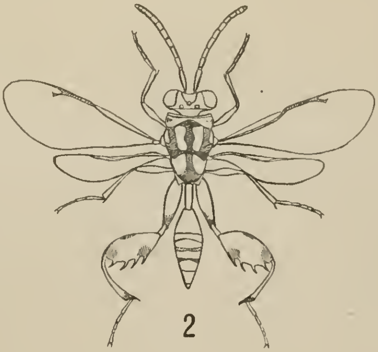

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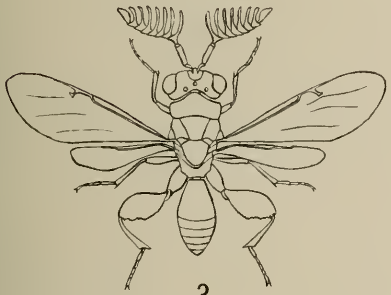

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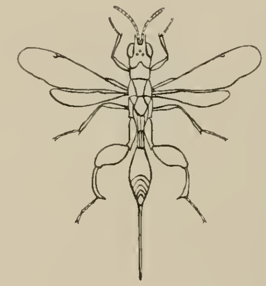

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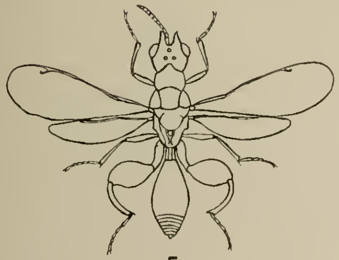

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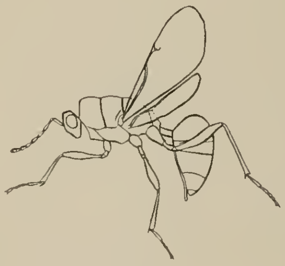
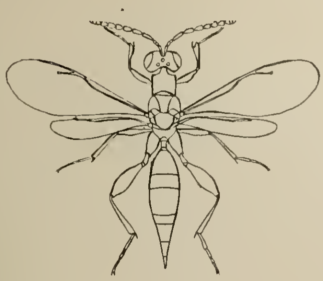


6

1. *Ceratosmicra petiolata* Ashmead, ♂.
2. *Tetrasmicra crocata* Walker, ♂.
3. *Hippota pecticornis* Latreille, ♂.
4. *Hontalia cameroni* Ashmead, ♀.
5. *Hontalia kirbyi* Ashmead, ♂.
6. *Aximopsis morio* Ashmead, ♀.

PLATE XXXIII.



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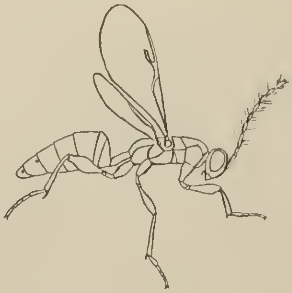

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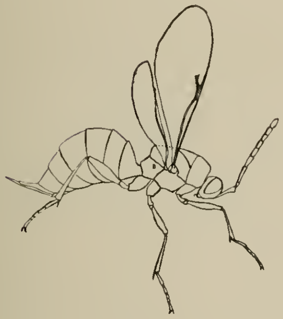

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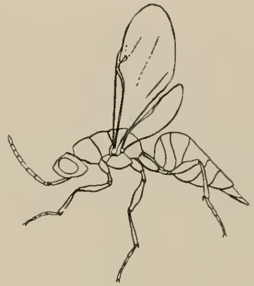

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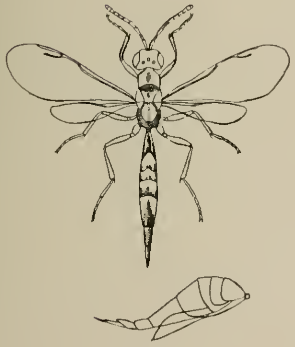

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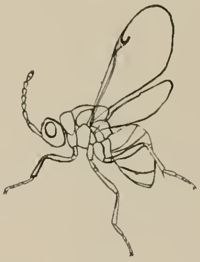

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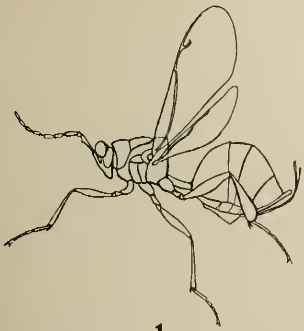
1. *Isosomodes brasiliensis* Ashmead, ♀.
2. *Isosomodes nigriceps* Ashmead, ♂.
3. *Chryseida æneiventris* Ashmead, ♀.
4. *Bephrata striatipes* Ashmead, ♀.
5. *Aximogastra bahiæ* Ashmead, ♀.
6. *Prodecatoma flavescens* Ashmead, ♀.



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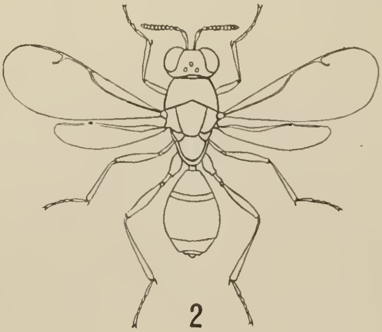

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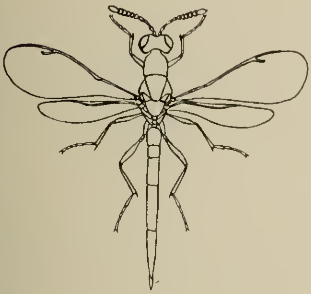

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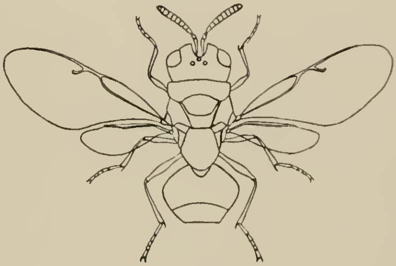

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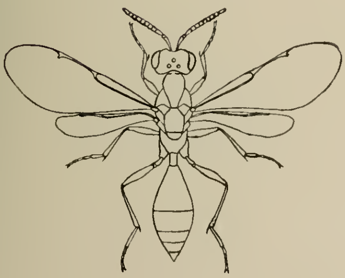

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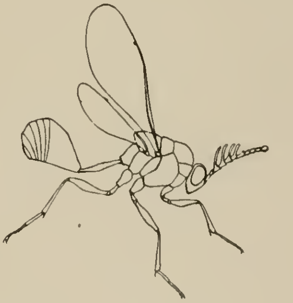

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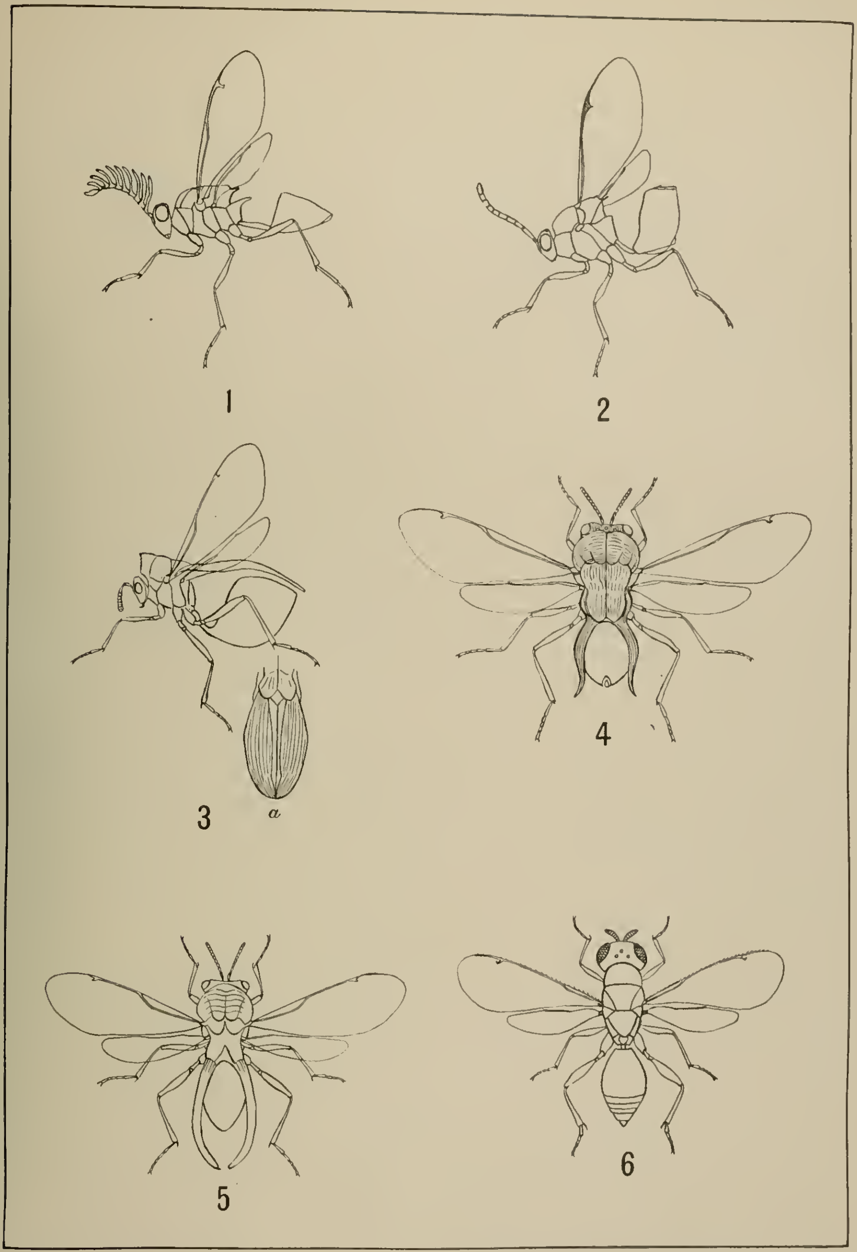
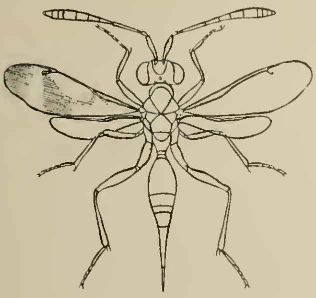
1. *Eudoxinna transversa* Walker, ♀.
2. *Neorileya flavipes* Ashmead, ♀.
3. *Macrorileya œcanthi* Ashmead, ♀.
4. *Perilampus brasiliensis* Ashmead, ♀.
5. *Orasema rapo* Walker, ♀.
6. *Pseudochalcura nigrocyanea* Ashmead, ♀.



1. *Tetramelia plagiata* Walker, ♂.
2. *Stibula nigriceps* Ashmead, ♂.
3. *Dicœlothorax platycerus* Ashmead, ♀.
   a, scutellum seen from above.
4. *Kapala splendens* Ashmead, ♀.
5. *Lasiokapala serrata* Ashmead, ♀.
6. *Herbertia howardi* Ashmead, ♀.



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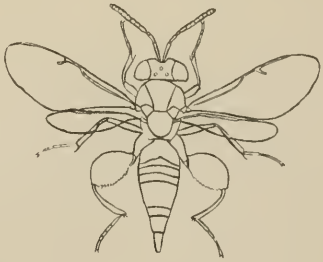

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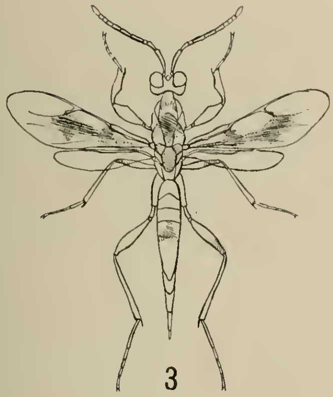

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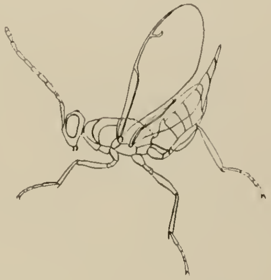

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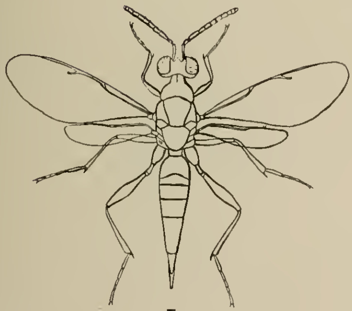

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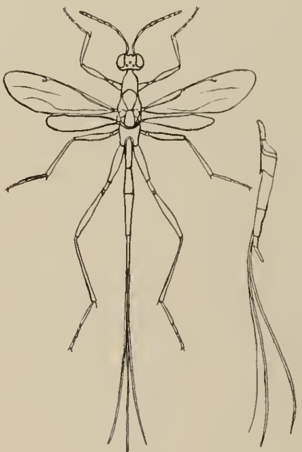
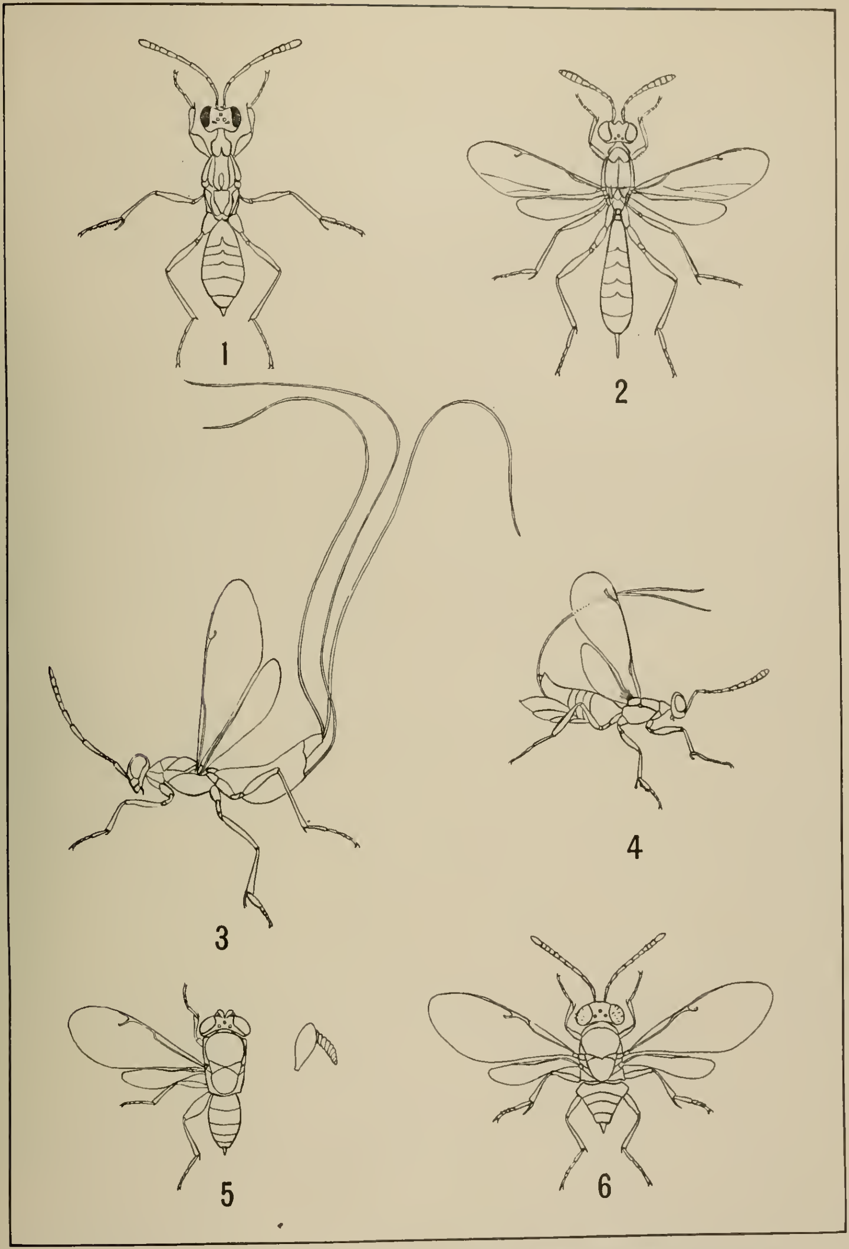
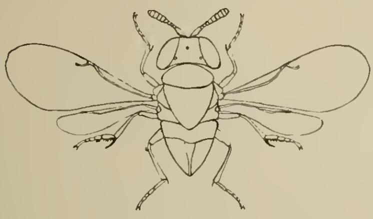


6

1 *Lelaps abdominalis* Ashmead, ♀.
2. *Chalcedectes annulipes* Ashmead, ♀.
3. *Lycisca ignicauda* Westwood, ♀.
4. *Trigonoderus brasiliensis* Ashmead, ♀.
5. *Epistenia basalis* Walker, ♀.
6. *Pelecinella howardi* Ashmead, ♀.



1. *Ooderella smithi* Ashmead, ♀.
2. *Macreupelma brasiliensis* Ashmead, ♀.
3. *Phlebopenes pertyi* Ashmead, ♀.
4. *Encyrtaspis brasiliensis* Ashmead, ♀.
5. *Trichencyrtus robustus* Ashmead, ♀.
6. *Parencyrtus brasiliensis* Ashmead, ♀.



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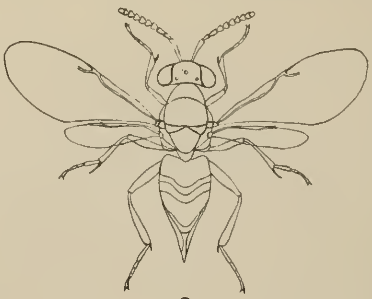

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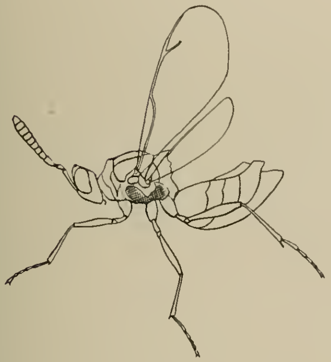

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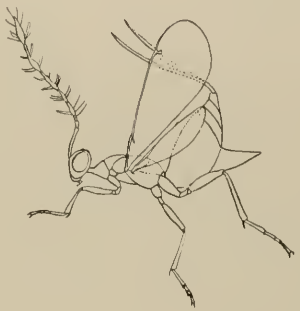

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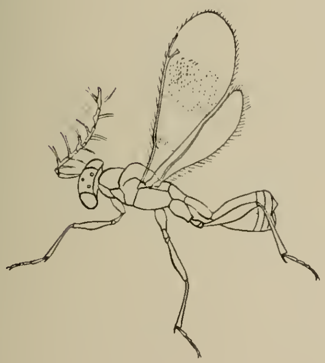

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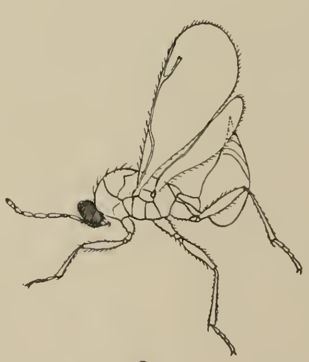
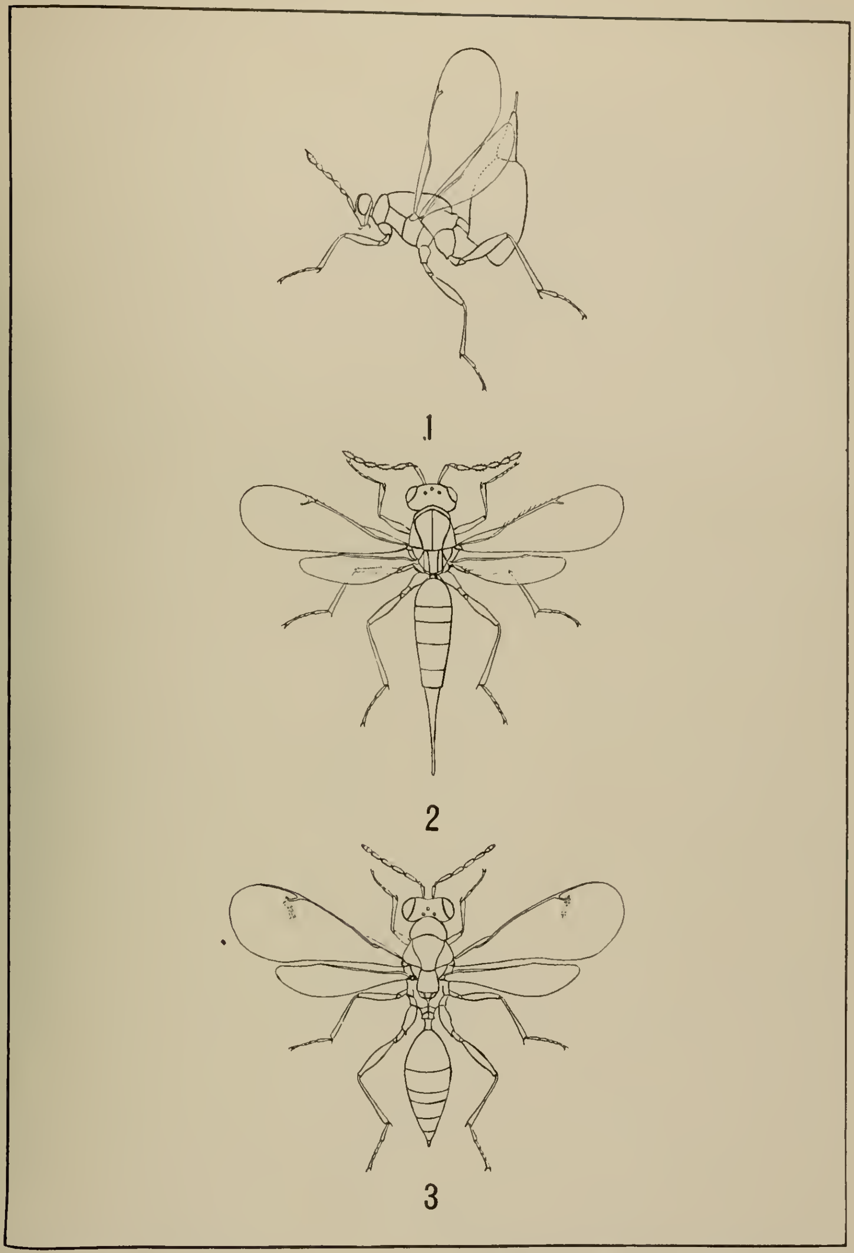


6

1. *Ænasius chapadæ* Ashmead, ♀.
2. *Hemencyrtus herberti* Ashmead, ♀.
3. *Acanthometopon clavicorne* Ashmead. ♀.
4. *Uræntedon verticillata* Ashmead, ♀.
5. *Hoplocrepis bifasciata* Ashmead, ♂.
6. *Eulophopteryx chapadæ* Ashmead, ♀.



1. *Paracrias laticeps* Ashmead, ♀. 2. *Tetrastichus brasiliensis* Ashmead, ♀.
3. *Stenomesius dimidiatus* Ashmead, ♀.